

ECHO IRELAND

IRISH RADIO TRANSMITTERS SOCIETY

September 2015 - 83 YEARS



YOTA — Youngsters On The Air, Italy 2015 - Photo IZ5DIY



IOTA Contest 2015 — the TH11 at EI9E



EI7DAR at the Louth Agricultural Show

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Contents

Society Officers & Committee Members	2
Silent Key - EI6CW	3
Silent Key - EI9GU	3
President's Message - EI8CC	3
Regional Representatives	3
Youngsters On The Air - EI4GXB	4
Club News	7
Kerry ARG - ILLW 2015 - EI9FVB	8
Loop Head Lighthouse - EI4GXB	10
HAREC Exam Thoughts - EI6HIB	11
Hungary - 5 MHz Permit	11
Macros in Digital Modes - EI9KF	12
AF-119 IOTA DXpedition	15
IRTS News Bulletin Schedule	15
HF Happenings - EI2KC	16
MREN - Blacksod Lighthouse - EI9JA	19
NVIS Operation - EI5DD	20
Electric Car - EI9ED	23
The Sky's The Limit - EI8IU	24
Eclipse Propagation Experiment - EI7IG	25
SEARG - Exam Classes	26
EI2SDR - Satellite Hunting	27
Excerpts From The HX Files - EI2HX	28
Contest News - EI7GY	29
EI DXCC Single-Band Status	30
EI DXCC Listings - EI7GY	31
DXCC Honor Role	31
DXCC Challenge	31
Members Advertisements	32
Long Communications	32

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2015/16**

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Silent Key John (Jeff) Walsh EI6CW

The death has occurred on Monday May 25th of John (Jeff) Walsh EI6CW. Jeff was a member of Skerries Radio Club, a long-time member of IRTS and a retired radio officer. Funeral took place on Thursday 28th May.

May he rest in peace

Silent Key Sean Brennan EI9GU

The death has occurred of Sean Brennan EI9GU of Fries Village, Killarney, Co. Kerry. Sean, originally from Co. Wexford was buried in Rathgarogue Cemetery near New Ross, Co. Wexford on 13th August.

May he rest in peace

A Message from our President ...

Those present at the Society's Annual General Meeting on 26th April in Kilkenny will recall that I mentioned my intention to invite President Michael D. Higgins to consider becoming Patron of IRTS. You will be pleased to learn, I have no doubt, that the President has indeed acceded to my request.

In early July I wrote, on behalf of the Society, to President Higgins. In my letter to him I set out the historical background to amateur radio and the legislative basis and licensing arrangements associated with it. The issues around the contributions to science and service to the community made by radio amateurs were also dealt with.

A detailed background note on the hobby, which accompanied the letter, set out the nature of the worldwide organisation of the hobby. It also dealt in some detail with the history of radio experimentation in Ireland from the days of Marconi and Col. M. Dennis, the Society's first President. Some more recent scientific achievements of radio amateurs were also described.

In extending the invitation to the President I mentioned that, towards the end of his term of office, the late President Patrick Hillery was Patron of IRTS and that our society has not had a patron since that time. The President's office responded positively just recently and indicated that he had pleasure in accepting our kind invitation.

It was pointed out that the granting of patronage does not carry with it any obligation or expectation in relation to the Society on behalf of the President and furthermore he must be the sole patron. The patronage of the President will, I believe, enhance the standing of the Society both here at home and in the international amateur radio community.

Gerry EI8CC
IRTS President



IRTS Regional Representatives

Regional Representatives act as liaison between members/clubs in their respective regions and the IRTS Committee.
Feel free to contact them if you have any issue to raise or suggestion to make about IRTS or its activities.

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Youngsters On The Air Italy 2015

Ger McNamara EI4GXB YOTA Co-ordinator

Team Ireland, consisting of Ger McNamara EI4GXB, Aaron O'Reilly SWL & James Canning SWL, took part in YOTA 2015 at Marina Di Massa, in Tuscany, Italy from August 18-25. Below are the thoughts of Aaron & James on their experience at the camp.



James Canning, Silvio IZDIY, Aaron O'Reilly, Ger EI4GXB

My Day-to-Day report of YOTA Italia by Aaron O'Reilly.

Saturday 18th July

The start of YOTA (Youngsters on the Air) 2015 summer event. Team EI arrived into Pisa Airport early afternoon awaiting pickup from Silvio, the Italian event organiser. After just a few missed calls, emails and texts sent we eventually got hold of the bubbly Italian who arrived to collect us and take us to Marina De Massa, our QTH for the week.

Needless to say, the weather was excellent and the temperature was approximately 35°C. The pool was the spot for those who were looking to cool themselves. After meeting some of the Nordic participants, we learned that when they departed from their homes, it was only 10°C. Lunch on Saturday was quite enjoyable and Ger (EI4GXB and EI Team Leader) introduced us to some of the Estonians that Ger had met at previous YOTA camps. These Estonians were our first acquaintances and later became ringleaders for the entire pack of youngsters. In terms of radio usage on Saturday the spider-beam antenna was set up and over 800 QSOs made before the station shut down for the evening.

Sunday 19th July

YOTA camp started with the presentation by Silvano I2YSB and his DXpedition team, famous for numerous excursions to the Republic of Congo. When the presentations finished Team EI went to the station while others went for the US licence exam and to the pool or beach to cool off. Well done to Ger for passing the Technician and General Exam!

After dinner we prepared for the intercultural evening. Every team had something interesting to present to the other countries. We tasted blood sausage from Estonia, dates from Cyprus and even the reliable shortbread biscuits from the guys in the UK. After the presentations and tasting session James and one of the Bosnians named Dusko (what Bugs Bunny is called in Bosnia—and Dusko looks and sounds like

him too!) showed us how to waltz to some modern drum and bass music. Youngsters exchanged QSL cards, souvenirs, different kinds of brochures, and tried to sell their respective countries to others who wished to visit. Team EI showed some videos of 'the mutton' up the mountains in Connemara, the Cliffs of Moher, the scenery of the Wild Atlantic Way and other famous landmarks around our wonderfully "sunny" country!

Monday 20th July

Every morning we started with an energiser to help us wake up (especially after the Intercultural evening). Monday's energiser was organised by Team G and involved untying the group of a human knot.

Next it was time for our first lesson of "Good Morsing" by Jerzy SP3SLU. We listened to the CQ Serenade song, learned how to spell CQ and YOTA in CW along with some other abbreviations. After the "Good Morsing" lesson, we were divided into two groups, one who would do ARDF and Florian OE3FTA gave a small presentation about DXing, contesting and the Do's and Don'ts to the other half.

After lunch, the "Golf Team" showed us how to build a HF wire antenna and a PSK32 Receiver. The soldering proved to be quite a challenge and many hands were needed to hold resistors and capacitors in place. Afterwards, Tommy ON2TD gave a presentation about Geocaching. Small "logbooks" are hidden in little boxes all over the world. You can look for them and sign-in if found. Some even have small souvenirs for the finder to keep or deposit at a location further afield.

We closed the evening with a dive in the sea. It was fresh, unlike the temperatures around here... After our swim, Silvio IZ5DIY and Alex IV3KKW surprised us with a box of Chinese lanterns. We had an amazing evening, got to know many new friends and had a good laugh together when some of the lamps took a dive into the sea. There were even some competitions between teams to modify the lanterns to go as far as possible.

Tuesday 21st July

Our Tuesday started with some energiser led by our friends from EA. After getting energised, the youngsters went on to the shack for some Good Moosoooooorsing activity by Jurek.

The afternoon saw a presentation from the coax company "Messi & Paoloni". The youngsters of EI team took a mid-day nap to try and re-re-energise after the sun and past few days activities taking their toll on our pale skin. Ger, our reliable leader pulled the short straw and endured the presentation to later fill us in on what he had learned. Later in the afternoon we hit the 20m band hard for the hour we had reserved. QSOs were flying in at a high pace and for the two younger EIs... Well we got thrown into a pile up at the deep end. We recruited Tauri, one of our Estonian friends to show us how to get a QSO every 20 seconds which was quite impressive to listen to.

The latter half of the evening left us running like headless chickens looking for treasure that had been scattered around

the campus by Team EA. At least they waited for the sun to go down before making us swear...Sweat I mean! Still being hot (high 20's, I'm sure you can appreciate our lack of enthusiasm for physical exertion!)

Wednesday 22nd July

This day started with an early breakfast. We jumped on a bus with our lunch bags and headed towards Florence. The weather report predicted an incredible 38°C, so everyone followed Silvio's suggestion to bring lots of water. At least the coach was air-conditioned which carried us across the beautiful landscape of Tuscany. When we arrived in Florence, we were blown away by the heat and it was only early morning! Luckily the tram we took to the city centre was comfortable and cool as well.

We began with a guided tour of the city. They showed the famous old buildings of the city, which have existed for 500 years and even longer. It was interesting to hear the history of how the city became so rich and why the Renaissance started from here.

We visited the famous Santa Maria del Fiore cathedral. It is quite impressive. The size, the beautiful exterior and the huge dome and bell tower were all subject of numerous photos and not to mention the selfies. I suppose the 'Lucky Lucky' men cannot go without mention. Some hard bargaining was done at many points throughout the city and many bargains were captured. €30 pairs of RayBans were scored for only €7 and hats that were advertised for €15... well lets just say somebody came away with three of them for less then the asking price of one!

After lunch we got on the bus to Pisa, the second part of the days trip. We walked to the famous leaning tower to take a nice photo with the big group – or better: to take probably a thousand photos waving our national flags in front of the famous sight. Some tourists might have wondered why a huge group with many different national flags were shouting; dah-di-dah-dit dah-dah-di-dah. Even a policeman came to see if everything was alright.

Thursday 23rd July

Well at some point, we all felt that the day to say goodbye was closing in. As usual, breakfast at 8:00. Not all people were present, as they stayed a bit longer in bed after the previous night. One energiser organiser tried to motivate us by roaring: "There is no time for sleeping at YOTA, take a



Aaron on Air

nap when you get home". I'm not sure people took that on board!

Later on, we followed the same routine, presentations, beach, swimming pool, presentations, beach, swimming pool, and so on. One of the highlights of the day was the off-air contest, by Kris ES7GM (P33W in the contest). It was very interesting and just as exciting as the real deal. There were huge pile-ups on our 20, 40, and 80m benches in the park. Some handled it like professionals, while some others were feeling a bit uncomfortable.

In the evening we had a lottery where the main prize was a paddle for CW called the Begali Simplex, donated by Piero Begali I2RTF and the lucky winner was Tauri ES5HTA. Piero also donated another key, the Begali Signature, to be used as the official key of the YOTA program. Following the raffle we continued the party on the beach where even more Chinese lanterns were set alight and the whole group took to the sea to enjoy the salt and the sand that is the Mediterranean!

Friday 24th July

It started out pretty much like every other day – breakfast, energiser that was initiated by the SM team. But one could still feel that the end of an amazing week is rippling on the horizon by the sight of sullen faces and thinning audience at the D4C presentation (lead by Fabio).

The YOTA Open Day concept was made clear to us – vocalise your impression of the week on behalf of the team you belong to. Team EI took the spare time we got to catch up on sleep and ponder our thoughts from the week. We came up with a short speech that thanked the organisers, the IRTS for supporting the team and most importantly the other participants that made the week so enjoyable. There were many new faces to put names to, upon our arrival, but by the end of the week I can safely say I could remember at least half of them!

We laughed together at the sketch the boys from the OK team played out, which involved a comic view of the past couple of days (and a lot of pasta). Then some more emotional words were said, to wrap up the program, and we were free to go to dinner and prepare for the farewell party at the beach. I think everybody understood that amateur radio is not just a hobby but it's almost like having a second family.



James and Aaron Fox Hunting

Saturday 25th July

Well Saturday morning came and after a small search for the last member of the EI team we were ready for home. Silvio dropped us back to the airport where we went through the usual routine of Ryanair check in, security and a bit of duty-free shopping before boarding the flight to Dublin. Once we touched down we each went our separate ways. I'd like to thank Ger EI4GXB and the IRTS for allowing them experience the joy that is YOTA!

My report of YOTA Italia by James Canning

In July I was asked would I like to participate in YOTA 2015. At first I had no idea what it was, so I went online to look it up. I watched past videos and it looked very interesting, and also since my father Brian is a radio amateur (EI8IU). Because of this I had a basic understanding of radios and contesting with the Shannon Basin Radio Club. YOTA was based on getting young people interested in amateur radio so I wanted in. To be able to take part I had to write a letter of application explaining why I wanted to take part in YOTA 2015. When I got a reply saying I was nominated to be part of the Irish team to go to Tuscany, Italy, I began to get a little excited. Of course my father warned me that it's not a holiday and I would have to do some research and have a basic knowledge of amateur radio and not just tell people I watch my father operate.

Once I had done my research it was a waiting game. I was also informed that in order to transmit over the radio you needed a licence so you can't just go on the air and look for someone to chat with. Since the exams in Ireland are held in October and November I would need to wait for that but since I would be participating in YOTA 2015 it should help me towards getting my license. I left for Tuscany on July 17th with Ger McNamara EI4GXB and Aaron O'Reilly. At the airport we met the Italian team leader and organiser Silvio. He was already in the spirit of things with YOTA shaved into the back of his head. After showing this he then explained that his wife was also a amateur radio operator which explained why he was let do this. He brought us to Marina Di Massa, a beautiful location with the endless ocean views and golden beaches.



Ger EI4GXB meets Piero I2RTF owner of Begali Keys

After checking in and dropping our bags in our rooms we were confronted with "THE SHACK" which was quite impressive even from a non-operators point of view. Since we were a day early we had a short meet and greet with the Italian, Polish and half of the Austrian team. We then got the week's itinerary which had a good balance of practical and basic sitting and listening activities. This was all run like a well-oiled machine throughout the week. Every morning during the week we had energiser games which were a brilliant idea because it really helped the 70-odd people become closer and comfortable with each other, it also helped bump up the numbers of everyone's Facebook friends list.

On the second day once everyone had arrived we had an Intercultural Evening which was everyone having a table to present what their country was famous or well known for. This was a great idea as it broke the ice and got everyone talking (mostly about how good something tasted). Everyday there was a schedule done up of what slots the teams got during the day to be on the air. These slots were about an hour and a half long. Being on the air really got me interested especially dealing with the odd pile up. It was almost infectious once you got your first pile up you wanted to keep going and keep building your QSO count up. It got to a stage where after dinner (usually the Irish slot) me and Aaron would bicker as to who got on the "good radio" (the one we thought had the pileups). It was always nice to hear fellow Irishmen on the air and find out how much rain we were missing out on. I also had the pleasure of having a couple of QSOs with the "Old Man" which I believe made his day!

On Wednesday we had a trip to Florence and had a walking tour of all the sites. We then had some time to peruse the streets for knick-knacks to bring home. We then departed for Pisa where we visited of course the leaning tower, where we had a group photo of everyone and their country flags. We also made a video of us saying YOTA in Morse which we had all learned thanks to our "Good Morsing" lessons.

On the last day we had a presentation of different things given to every team member to thank them for taking part in YOTA 2015. For some it was an emotional few minutes, every team had a go at saying a few words to everyone and a few words of thanks to the organisers. When evening came we all hit the beach and had one last farewell party and get together. We lit lanterns to launch into the sky this was a kind of last hoorah.

To sum up our trip and participation in YOTA 2015 - it was a brilliant experience and really helped me and Aaron become much more interested in amateur radio and working towards getting our licenses. Of course we were always closely monitored by our team leader Ger and couldn't have got up in the mornings without him so I would like to thank him and the IRTS for allowing me to participate and have such a wonderful experience. 73 de James (15 years).

Ger EI4GXB IRTS Youth Co-ordinator writes:

Both James & Aaron enjoyed their experience at YOTA 2015 and will hopefully be sitting the next HAREC exam to get their own callsigns allowing them to make further contact with the great international teams that they met at YOTA 2015. While encouraging the lads to sit their exam, I decided to sit the ARRL exam session that was hosted by ARRL Volunteer Examiners. We did not have time to complete the Extra examination, but I passed the Technician & General exams and am awaiting my US callsign!

News from around the Clubs

Cork Radio Club

Cork Radio Club has many interesting events planned in the coming months. For example, on Wednesday September 16th the club head off to Summerhill in County Meath to view the long wave station as operated by RTE. Also on the same day club members will delight in a visit to the old Radio Éireann transmitter site in Athlone. Thanks to John Hearne EI2FG for facilitating this event.

Prospective candidates to study and sit the radio theory examination are encouraged and welcomed to contact Dave EI4BZ on 087-6290574 or email ei4bz@eircom.net for further details. Please do so as soon as possible.

Looking ahead to 7th October, Jerry EI6BT will do a presentation to the club on 'Marine Communications.'

The Cork Radio Club meet every Wednesday, 8pm at the Community Centre at Carrigtwohill.

South Dublin Radio Club Public Demonstrations

South Dublin had a presence at two important public events recently.

Dublin Maker was held on July 25th in a tented festival space on the grounds of Trinity College Dublin. It was free to attend, a family-friendly and community-driven event. www.dublinmaker.ie/

It took the form of a "show and tell" experience where inventors/makers, sourced through an open call, had the opportunity to showcase their creations at individual booths in a carnival atmosphere. It's a place where people showed what they were making, and shared what they were learning.



There was significant interest in the SDR offering which included a talk by Daniel EI9FHB on the work he had done to set up the HAM-TV station in Cork which can receive TV pictures from the International Space Station (ISS) as part of a European chain of stations.

The club also had a presence at the Astronomy Ireland The 25th anniversary Star-B-Q at Roundwood, Co Wicklow.

Once more the portable HAM-TV was on view to the public alongside home-made telescopes and rockets! <http://www.astronomy.ie/>

Photos courtesy of Tony EI7GUB and Tom EI7HT

South Dublin Radio Club meets every Tuesday at the Ballyroan Community Centre on Marian Road, Rathfarnham, Dublin 14. The 15B bus stops nearby and parking is free. Meetings now start at **8:30pm** and finish at 10:30pm

The club is starting regular classes in Amateur Radio. The classes are run at no cost to participants except for the 5 euro weekly tea, coffee and biscuit charge. No prior experience is necessary and beginners are welcome. If you are interested please arrive for 8:30pm start.

Please also pre-register for the classes through the website, although beginners and visitors are free to drop by any week. www.southdublinradioclub.ie



Cavan Repeater Group

The Cavan repeater group propose to provide a technical service to newcomers and listeners in its coverage area.

Topics can range from PL259 to BNC connecting practices to why you should have an earth rod in your shack, etc.

Proposed times are Tuesdays at 20.30 hrs on 145.7875 MHz (2 metres) CTCSS 88.5 and 70.2875 MHz (4 metres) CTCSS 88.5. Cavan repeaters link with West Tyrone and the Southern repeater groups.

EI80OPC

To celebrate 80 years since the building of O'Neill Park, Clones a special festival was held on the Green in the estate

Among the big attendance to enjoy the music and BBQ was Heather Humphreys TD, Minister for Arts, Heritage and the Gaeltacht.

Local amateurs Pat EI4HSB and Mark EI4HDB set up a demonstration station with the special callsign EI80OPC and were able to distribute IRTS information to those interested.



Séamus EI8BP, Frank SWL, Mark EI4HDB, Pat EI4HSB at EI80OPC



Pat EI4HSB operating EI80OPC



Kerry Amateur Radio Group — ILLW 2015

Declan Horan EI9FVB

The International Lighthouse & Lightship Weekend is a long-established event for the Kerry Amateur Radio Group, who once again undertook the annual pilgrimage to Cromwell Point Lighthouse on Valentia Island, Co. Kerry, for the 12th time. The assigned lighthouse number was IE0001 and the callsign was EI1K.



Cromwell Point Lighthouse

Planning for an operation begins at the end of the previous operation. That is to say, any lessons learned, observations made or suggested improvements are noted, then carried forward to the planning for the next operation, ensuring that each year we build and improve. This year was no different with regard to this.

Meetings are held by the planning committee of the Kerry Amateur Radio Group in the months preceding ILLW, with jobs being allocated to those involved in the event. Broadly speaking, this falls into two categories. Those who will operate the stations and those who will set up the site. The former is self explanatory with club members expressing a

time period within which they wish to operate. The latter category falls to the Kerry Amateur Radio Group Expeditionary Team who take care of the logistics and site setup.

This year two stations were established at the lighthouse. One located in the generator room and another in the former light keepers house.

The station established in the generator room worked on both SSB and CW, depending on operator preference. It consisted of a 100 W transceiver into a commercially produced G5RV strung from the lighthouse railing at 15 metres, to a 10-metre support in the corner of the lighthouse keepers house compound. This runs approximately North South.

Further attached to the 10 metre support pole is a 40m delta loop antenna. This antenna is apex fed and lies at an angle of approximately 45° with its corners held aloft by two suitably guyed 4-metre telescopic painters' poles. The delta loop was specifically constructed with custom clamshell corner insulators being machined and permanently attached to the antenna, this made erecting it very quick indeed. It was connected to the 100 watt station set up in the light keepers house operating on SSB.

A set of good quality band-pass filters was employed by each station allowing peaceful co-existence even on harmonically related bands. This time we logged on computer making operating much easier than previous years of paper logging. This allowed for the event log to be uploaded to the various on-line sites very rapidly after the event.

The Expeditionary Team of the Kerry Amateur Radio Group moved the equipment onto the site on the Friday of the event. The team was entirely self-sufficient. All rigging, station setup and catering was completed in time for a proper evening meal, and station testing commenced thereafter. This then allowed for a rest period before the event began at midnight UTC.

Accommodation this year was vastly improved compared to our first operation at the site 12 years ago. We had a freshly decorated room and working toilet which was much more comfortable than the tent we previously had.

Catering was provided by Billy which he constructed himself. The now obligatory meal of striploin steak, boiled baby potatoes, sautéed onions and mushrooms and petit pois all smothered with creamy peppercorn sauce was served on Saturday night. Such was the dedication to making contacts, Declan is rumoured to have taken his meals at the microphone, a sterling effort to fill the log.

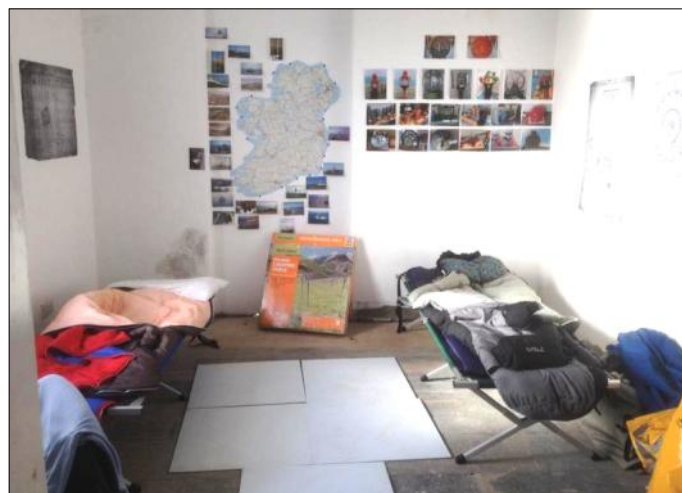
Tom operated a long shift on CW through the night. Breakfast consisted of the now famous "Valentia Island Sandwich". Some say that consuming one will put hairs on your chest and others say it'll improve your CW. All Billy knows is that a Valentia Island sandwich is a food group in its own right. As well as being chief cook and bottle washer,



John EI9ESB operating SSB station in light keepers house



Tom EI3AL operating CW at the generator room station



Sleeping quarters in light keepers house

Billy also operated for extended periods building a steady log of contacts.

On-air conditions were variable with bursts of good activity followed by periods of poor propagation. Despite this a very respectable log was filled. Cromwell Point Lighthouse is located in the rare maidenhead square IO41. As usual, we had a 6m station on standby should propagation work in our favour; as when it does we tend to have huge pileups. However, there was no 6m propagation this year.

Many visitors on guided tours passed through over the weekend and much interest was shown towards the station offering a perfect opportunity to demonstrate our hobby. The station in the generator room was on display to members of the public. Visitors were able to observe and listen to the members of KARG communicating with other stations. Presentations on 'What is Amateur Radio' and various KARG activities was given, not just in English, but also in French, German and Spanish for the benefit of overseas visitors. This allowed us to promote our hobby in addition to demonstrating how it can be of vital importance in emergencies when other forms of communication may be difficult or not possible.

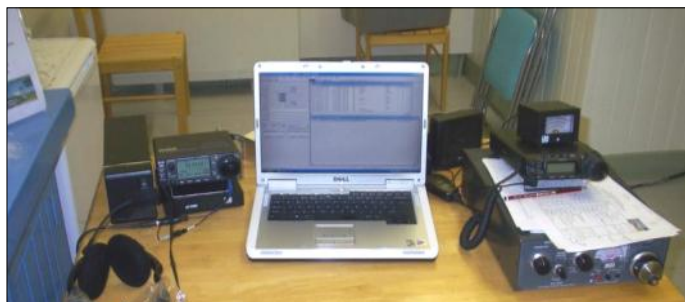
The site of the lighthouse was originally home to a Cromwell Fleetwood Fort believed to have been built in the 16th century, one of two built on Valentia around this time. The outline of the fort, with its bastions and barrack inside its wall, is visible from the air. The fort was maintained after the restoration and there are various State Paper entries about its repair over the period 1663-1665. It was disestablished in 1669. The first light for Cromwell Point was applied for on

30th March 1828 by the Right Honourable Maurice Fitzgerald, Knight of Kerry. Work commenced on the lighthouse ten years later in 1838 and the light was first exhibited on 1 February 1841. It has been automated since November 1947.

Originally the lighthouse was staffed by a single keeper housed with his family on site. However, with automation, the keeper was withdrawn and a part-time attendant was appointed to look after the station.

The height of the lighthouse tower is 15 metres, with the light itself a further metre above. It has a white sector visibility of 17 nautical miles and a red sector visibility of 15 nautical miles.

A special thanks go to our operators this year who kept the station on the air for the full event. John EI9ESB and Billy EI7CQB for operating on SSB, Tom EI3AL operating on CW. In addition, Declan EI9FVB and John EI9JO operated the display station on SSB and managed the visitors in a multilingual capacity. Tom operated tirelessly through the night pounding on the key. A fantastic effort was put in by all operators who made sure that the lighthouse was on the air for as long as possible over a very enjoyable weekend. We are already looking forward to our next operation from the lighthouse.



SSB CW station in generator room



Billy EI7CQB Declan EI9FVB John EI9JO



Activating Loop Head Lighthouse

Ger McNamara EI4GXB

For the fourth year in a row, Limerick Radio Club returned to Loop Head for the International Lighthouse & Lightship Weekend. The turnout of club members exceeded expectations with a total of 14 operating or providing support at various times over the Friday evening August 14th to the Sunday evening August 16th. Three of the club's new licencees Harry EI2KL, Joe EI6HHB and Albert EI5HXB operated for several hours over the weekend.



*Operating from Light Keepers Watch Room
GerEI4GXB, Dan Deck EI8KK, Brendan EI0CZ
Albert EI5HXB*

Using the call sign EI0LHL the club operated two stations; the main one in the Light Keepers watch room and the second, located in the lighthouse and aimed at the public in the hope of recruiting new members to the hobby and in particular to Limerick Radio Club. The public could see an amateur station in operation and also listen to live traffic.

Alan EI8EM provided a selection of his vast collection of QSL cards. Well in excess of 200 people would have seen the station in operation over the two days. Handouts and application forms were made available.

The lighthouse station operated mostly on 40 metres while the station in the Light Keepers watch room operated mostly



*Operating Sunday morning pile up on 20 M from Light
Keepers Watch Room.
Liam EI7DSB and Harry EI2KL and Harry*

on 20m. Propagation was very challenging, especially on 40m while 17m suffered deep and rapid QSB. Most QSOs were clocked up on 20m.

The antennas were a Cushcraft A4S, a G5RV and a trapped dipole. The Kenwood TS940S club rig was used in the lighthouse and the club Icom 756PRO, linear and ATU were used in the watch room. Logging was done using Log4OM.

The Cushcraft A4S along with a G5RV were mounted on the SCAM pump-up mast and the lighthouse platform was used to support the apex of the dipole.

- QSOs 923
- Phone 72%
- CW 28%
- Countries Worked 48
- Most Countries worked: Germany 300, England 126, Italy 51

Again, thanks to Brendan EI0CZ who clocked up practically all of the CW contacts. Liam EI7DSB ran a major pileup on Sunday morning on 20m SSB.



*Mounting the A4S on SCAM Mast
Simon EI7ALB, Dermot EI2GT, Brendan EI0CZ and
Ger EI4GXB*

NUIG continues to operate wave-height monitoring equipment at Loop Head and on Inis Oirr. Due to the proximity of the LRC antenna to the HF radar antenna at Loop Head (circa 50m) 20m operation was impossible at first on 20m as the radar frequency is just below 14.0MHz. A satisfactory resolution was found and the Club wishes to thank sincerely NUIG for allowing the HF radar system to be switched off and to the Commissioners for Irish Lights for facilitating our request for a resolution to the problem.

The club is also grateful to Clare Co. Council whose PR department advertised our presence at the lighthouse across local and national newspapers and on local radio broadcast stations.

continued on Page 11



Exam Thoughts

Niall Donohoe EI6HIB

A major topic of conversation in this hobby of amateur radio is of course the exam. I recently sat the HAREC exam and fortunately I passed. The following few words will be on my experience of the exam and how I prepared. This article may be of interest to any prospective exam candidates or maybe even people intending to run pre exam courses.

As a student still in secondary school, this exam was my first experience of an exam outside of the school setting. The rules are still similar - no cheating and don't be disruptive! However both the exam candidates and the layout of the paper were quite new to me.

My method of exam preparation was similar to what we are told to do in school. I used the exam syllabus a great deal. After all you can only be asked what is on the syllabus so being familiar with the syllabus is in my opinion a key part of exam success. The exam syllabus is available for download off the IRTS website (irts.ie/downloads) under Studying for the Harmonised Amateur Radio Examination Certificate.

Being familiar with the exam layout is also important. The fact that the exam is multiple choice does make it easier. There is also no negative marking so you might as well answer all questions. A sample copy of an exam is included in the download.

IRTS does not publish its question bank for the HAREC exam. However there is a massive question bank on the website of the New Zealand Association of Radio Transmitters www.nzart.org.nz. Their question bank is very similar to the type of questions on our exam. While studying I only used the electronics and radio theory questions that related to HAREC and avoided the New Zealand rules and regulations.

I printed off this question bank and over a few weeks completed it. After correcting my own mistakes it became clear what areas I needed to refresh on.

The single most important bit of study material that I used however was definitely the Course Guide, also available for download from the IRTS website. The course guide is a large file that has slides that cover everything on the syllabus clearly and comprehensively. Every few days I would try to sit down and do a small number of slides; after a few weeks I had gone through the slides more than once. The areas that I did badly on in the question bank questions I would refresh with the course guide slides and try the questions again. Over time the answers sink in. I found the radio theory interesting to learn about, the rules and regulations were less interesting but just as important, the band plans were a bit annoying to familiarise myself with but over time with a bit of study and listening they begin to become second nature.

Although I studied at home I did not study alone - every Tuesday I went along to the South Dublin Radio Club. The club members there have a wealth of knowledge and were happy to answer all my beginner questions. They also gave a number of talks and demonstrations that helped me get a greater understanding of all the different avenues in this hobby. It made it a lot easier to have someone explain aspects of the exam as not all radio theory and electronics is self-explanatory.

I hope that this article has helped any prospective exam candidates or pre exam course organisers.

I look forward to meeting you on the air
Niall EI6HIB

(continued from Page 10)

Credit to all club members who attended Ger EI4GXB, Mike EI2IX, Brendan EI0CZ, Dermot EI2GT, Joe EI6HHB, Harry EI2KL, John EI5HDB, Ronan EI5HRB, Garrett Madden SWL, Albert EI5HXB, Alan EI8EM, Liam EI7DSB and Paddy EI8GY. Special thanks to Liam EI4GB and Albert EI5HXB who moved the masts, antenna and associated hardware to and from Loop Head.



Recent licencees Albert EI5HXB and Joe EI6HHB

5 MHz - Hungary issues Temporary Permits for 5350 to 5450 kHz

The Hungarian telecoms regulator NMHH following representations from the Hungarian national amateur radio society MRASZ has been issuing temporary permits for operation in the band 5350 – 5450 kHz on a Secondary basis for propagation research.

The permits are valid for three months and can be re-applied for at the conclusion of the period. All modes are permitted with a maximum power of 100W (measured at the transceiver output terminal) currently in a nominal maximum bandwidth of 3 kHz.

Hungarian amateurs apply for the permit via MRASZ, who collate the information required then forward it to NMHH who issue the permit. Activity days are being organised and there is a CW beacon on 5357 kHz, at present using the callsign HA7SO, but this will change in due course to HG7BHB. It is hoped that the situation may become more permanent later in the year.



Using Macros in Digital modes

Hugh Bradley EI9KF

Macros are a convenient way to drop text into the transmit window when using digital modes such as PSK31 and RTTY. In a previous article (Part 1) I discussed the various computer programs available for working with digital modes. The structure of the QSO exchange was discussed in Part 2. In this article I shall provide the specific macro phrases used by the author. To my knowledge, there is a total lack of such information available either in the literature or on the internet. The reader can feel free to modify the text suggested to accommodate their own needs. The author uses the program Digital Master (DM780), part of the Ham Radio Deluxe suite of programs. DM780 enables the user to set up categories for the macros which relate to their function or place in an exchange.

When to send?

A macro can be designed to be sent immediately it is selected, or the text can be placed in the TX window and only sent when the SEND button is pressed. For example, when sending CQ, there is no reason to delay the sending. All CQ macros use the option of immediate send. In contrast, it can be useful to enter text about your rig, the weather, or yourself in phrases which can be assembled and edited while you are still receiving information from your contact. Your contribution can then be sent all in one piece as soon as it is your turn to transmit. To send a macro immediately, the box "send immediately" is ticked. The macro buttons display a small > icon beside the label to indicate the macro concerned is to be sent immediately.

Macro groups

Macros for PSK31, PSK63, QPSK, Contestia, Olivia, MT63, MFSK

Group	Im me d	Function
CQ	>	Sending out CQ
Answer	>	Responding to a call
Free		Building block phrases, not sent immediately
Questions		Occupation? Contests? Married? Rig? etc
Exchange	>	Standard exchanges send immediately – signal report etc
Utility	>	House keeping macros ie clear screen, Put in Split mode
Info	>	Your rig, antenna, about you etc
Closing	>	Selection of closings ie Short, Long, Italian, Spanish

CQ	
CQ Pile-up	CQ CQ de <my:callsign> <my:callsign> PSE k <stop>
CQ 2x2x3	CQ CQ de <my:callsign> <my:callsign> CQ CQ de <my:callsign> <my:callsign> CQ CQ de <my:callsign> <my:callsign> PSE K <stop>
CQ DX	CQ CQ DX de <my:callsign> <my:callsign> CQ CQ DX de <my:callsign> <my:callsign> CQ CQ DX de <my:callsign> <my:callsign> PSE K <stop>
Contest	CQ contest CQ contest Cq contest de <my:callsign> <my:callsign> PSE <stop>
Send RSID	<rsid>
ANSWER	
Me me	<my:callsign> <my:callsign> <stop>
Answer	<his:callsign> de <my:callsign> <my:callsign> Pse <stop>
FREE	
Him de Me At start	<his:callsign> de <my:callsign>
>Him de me	** <his:callsign> de EI9KF ** <stop>
FREE	

The author uses the following fields in the macros.
Others are available.

My Callsign	<my:callsign>
My QTH	<my:qth>
My Name	<my:name>
My Locator	<my:locator>
QSO-mode	<qso-mode>
His Callsign	<his:callsign>
His first name	<his:name>
His QTH	<his:qth>
Add to logbook	<add-log>
Erase TX window	<erase>
Total no. of QSO	<qso-mode-count>

Macros for PSK31, PSK63, QPSK, Contestia, Olivia, MT63, MFSK - contd

Him de Me (no TX)	** <his:callsign> de <my:callsign> ** <i>#Place this at the start of the block and build exchange</i>
>Him de me (Start Tx)	** <his:callsign> de <my:callsign> ** <stop> <i>#Place this at the end of the block and start Tx</i>
Report	You report is 599.
Rig	My rig is a Flex 6700 into a vertical antenna. I am using <power> watts.
Weather	The weather here in Louth is <weather> .
Me	I am <age> years old and a ham for four years. I do a little CW but mainly I like digital modes. I have a page on QSL.com.
Family	I am married with six children and eight grandchildren.
Occupation	I work as an orthodontist in my spare time.
QUESTIONS	
Occupation?	What do you do when you are not on the bands?
Married?	Are you married <his:name>?
Contests?	Do you take part much in contests?
CW?	Do you use CW much? I am still a learner.
Start PSK?	When did you start using PSK? Have you made any far away contacts?
Licensed?	When did you get your radio license?
EXCHANGE	
Long exch	** <his:callsign> de <my:callsign> ** Thanks <his:name> for your call on <qso-mode> You are 599 here in Ireland My name is <my:name> and my QTH is <my:qth> Loc : <my:locator> How do you copy <his:name>? ** <his:callsign> de <my:callsign> ** <stop>
Short exch	<his:callsign> de <my:callsign> Thanks <his:name> for your call - you are 599 Name is <my:name> and QTH is <my:qth> Loc : <my:locator> How do you copy ? <his:callsign> de <my:callsign> <stop>

Prev . QSO	** <his:callsign> de <my:callsign> ** Thanks <his:name> for your call.on <qso-mode> Name is <my:name> It's good to make contact with you again You are 599 here in <my:qth> Loc: <my:locator> How do you copy? ** <his:callsign> de <my:callsign> ** <stop>
UTILITY	
Come again	Again again please
Clear all	<erase> <erase-rx> <stop>
K3 split	RT0;XT0;FR0;DV0;BW0100;SWT13; SWT13;UP4;SB1;BW0280;MN111;M P002;MN255;
K3 unsplit	SWT11;BW0270;SWT13;SWT13;FR0 ;SB0;RT0;XT0;LK0;LK\$0;MN111;M P001;MN255;
INFO	
Rig Long	** <his:callsign> de <my:callsign> ** My rig is a Flex 6700 into a SteppIr vertical antenna. I am using <power> watts. My QTH is on a 200m hill. Back to you <his:name> ** <his:callsign> de <my:callsign> ** <stop>
Rig Short	** <his:callsign> de <my:callsign> ** My rig is a Flex 6700 into a vertical antenna. Back to you ** <his:callsign> de <my:callsign> ** <stop>
Me	** <his:callsign> de <my:callsign> ** I am <age> years old and a ham for four years. I do a little CW but mainly I like digital modes. I have a page on QSL.com. ** <his:callsign> de <my:callsign> ** <stop>
CLOSING	
Short close	** <his:callsign> de EI9KF ** 73 and thanks for the QSO Good luck. ** <his:callsign> de EI9KF ** SK <add-log> <reset-log><<stop>
Long Close	** <his:callsign> de EI9KF ** 73 <his:name> and thanks for the <qso -mode> QSO on <his:band> Best of luck from Ireland QSL by LoTW and eQSL preferred ** <his:callsign> de <my:callsign> ** SK <add-log> <reset- log><erase><stop>

Macros for PSK31, PSK63, QPSK, Contestia, Olivia, MT63, MFSK - contd

Pile up	73 and Thanks <his:callsign> de EI9KF <add-log> <reset-log><<stop>
His Qth	** <his:callsign> de <my:callsign> ** 73 <his:name> and thanks for the <qso-mode> QSO on <his:band> Best of luck from Ireland to beautiful <his:qth> qsl LoTW, eQSL or card ** <his:callsign> de <my:callsign> ** SK add-log <reset-log><erase><<stop>
Spanish	** <his:callsign> de EI9KF ** 73 <his:name> Mil gracias por QSO Buena suerte. ** <his:callsign> de EI9KF ** SK <add-log><reset-log><erase><<stop>
Russian	** <his:callsign> de EI9KF ** Spasibo za kontakt <qso-mode> QSO <his:band> 73 <his:name> Ocen blagadaren vam za priyatnuju svjas qsl - LoTW, eQSL or card Pse ** <his:callsign> de EI9KF ** sk <add-log> <reset-log><erase><<stop>
German	** <his:callsign> de <my:callsign> ** Danke sehr fer QSO <qso-mode> nun gru 73 gutes dx und awdh ** <his:callsign> de <my:callsign> ** sk <add-log> <erase> <stop>
Portug	** <his:callsign> de <my:callsign> ** 73 <his:name> Muito obrigado pelo muito agradavel <qso-mode> QSO de <his:band>. QSL LoTW , eQSL or card ** <his:callsign> de <my:callsign> ** sk <add-log><reset-log><erase><<stop>
Italian	** <his:callsign> de <my:callsign> ** 73 and thanks for <qso-mode> QSO on <his:band> In bocca al lupo! Ciao qsl - LoTW, eQSL or card Pse ** <his:callsign> de <my:callsign> ** SK <add-log> reset-log<erase><<stop>
French	** <his:callsign> de <my:callsign> ** Merci beaucoup pour QSO ici <his:name> 73 et au revoir ** <his:callsign> de <my:callsign> ** sk <add-log><reset-log><erase><<stop>

When using CW or RTTY, exchanges are made shorter and words are often clipped.

RTTY Macros

CQ	
CQ Pile-up	CQ CQ CQ DE EI9KF EI9KF EI9KF CQ PSE <stop>
CQ 2x2x3	
CQ DX	CQ CQ DX de <my:callsign> <my:callsign> CQ CQ DX de <my:callsign> <my:callsign> CQ CQ DX de <my:callsign> <my:callsign> PSE K <stop>
RSID	<rsid>
ANSWER	
Me me	<my:callsign> <my:callsign> <stop>
Answer	<his:callsign> de <my:callsign> <my:callsign> Pse <stop>
EXCHANGE	
Long exch	tnx fer call =u r 5nn 5nn= name is <my:name> <my:name> = qth is <my:qth> <my:qth> =hw copy <his:name> ? <his:callsign> de <my:callsign> <stop>
Short exch	<his:callsign> TU 599 599 bk<stop>
Pile-up	TU 599 sk <add-log> <reset-log><erase><stop>
Contest	<his:callsign> 599 <qso+> <stop>
UTILITY	
Come again	AGN AGN PSE <stop>
Clear all	<erase> <erase-rx> <stop>
K3 split	RT0;XT0;FR0;DV0;BW0100;SWT13;SWT13;UP4;SB1;BW0280;MN111;MP002;MN255;
K3 unsplit	SWT11;BW0270;SWT13;SWT13;FR0;SB0;RT0;XT0;LK0;LK\$0;MN111;MP001;MN255;
INFO	
Rig	Rig hr is Flex es ant is vertical
Me	OP hr is <my:age>

CLOSING	
Close	Tu for ur call 73 <his:name> de <my:callsign> <add-log><reset-log><erase><stop>
Pile up	TU EI9KF <add-log><reset-log><erase> <stop>
Spanish	73 <his:name> Mil grac por QSO Bna rte. QSL PF <his:callsign> de EI9KF SK <add-log> ><reset-log><erase> <stop>
Russian	Spasibo za kontakt QSO 73 <his:name> qsl - Pse <his:callsign> de EI9KF sk<add-log> ><reset-log><erase> <stop>
German	dke sehr fer qso <qso-mode> nun gru 73 gutes dx und awdh <his:callsign> de <my:callsign> sk <add-log><erase> <stop>
Portug	73 <his:name> Muito obrig pelo QSO QSL Pse <his:callsign> de <my:callsign>sk <add-log><erase> <stop>
Italian	73 tnks for QSO Ciao <his:callsign> de EI9KF SK <add-log><reset-log><erase> <stop>
French	Mci bcp pr qso ici gru 73 et au revoir QSL SVP <his:callsign> de <my:callsign> sk <add-log> ><reset-log><erase> <stop>

IOTA DXpedition



November 15th to 23rd will see Christian EA3NT, Dave EI9FBB, Col MM0NDX, Ronald PA3EWP, Jacek SP5APW & Craig VK5CE come together for the first ever activation of Coetivty Island AF-119NEW.

Situated 300km south of Mahe – Seychelles, Coetivty Island is home to an active prison for low security prisoners and a rehabilitation center for drug abusers. Visitation is strictly controlled and access is only possible by private airplane charter, using the short 550 meter airstrip.

The cost of staying for just one night on the island is extortionate – we are staying for six nights! We have no choice but to pay these staggering costs if we are to activate this brand new IOTA for the 1st time.

Using the callsign **S79C**, the experienced team (with over 160 DXpeditions between them) will be QRV from 40m through 10m CW, SSB & RTTY and if special permission can be granted, 6m too! We are calling on all DX clubs, Foundations & the IOTA / DX community to kindly consider donating to our 'Support' page on www.af119new.com where full information can also be found.

Thank you,
Team S79C

Radio News Bulletins and Readers

Sunday

Dublin	1100	7.123	SSB	Sean EI7CD, Ger EI4GXB, Paul EI2CA
Wicklow	1130	3.680	SSB	(as Gaeilge) Paddy EI7GK, Danny EI6GS
Dublin	1145	145.525	FM	Tony EI5EM, John EI7JG, Frank EI6EF, Liam EI3HK
Clare	1200	3.650	SSB	Ger EI4GXB, Sean EI7CD
Mayo	2000		FM	145.600, 433.450, 70.375, 50.450 - Padraic EI9JA, John EI7FAB,
				Mike EI2EO, John EI3JM, Dominic EI9JS
Tipperary	2030	145.450	FM	Tommy EI2IT, Eddie EI3FFB

Monday

Cork	2000	145.750	FM	Vincent EI7HN
Limerick	2000	145.725	FM	Brian EI9AL, Simon EI7ALB, Ger EI4GXB, Liam EI7DSB, Tony EI2AW
Louth	2000	145.675		Thos EI2JD, Anthony EI2KC, Jim EI2HJB

Tuesday

Waterford	2130	145.650	FM	David EI6GVB
North Cork	2030	430.925	FM	Lisa EI9GSB, Robbie EI3GGB



HF Happenings

Anthony Murphy EI2KC

This might be a somewhat curtailed HF Happenings, due partly to the fact that there has been a lull in activity on the bands during the summer months and partly because propagation and band conditions are poor.

In fact, conditions have been so poor lately that it's beginning to remind me of late 2009, when I was first licensed and we were in the extended sunspot minimum that continued right through 2010. In the past week, we've seen sunspot numbers as low as 32, and the solar flux index as I write is just 86. Generally when the SFI goes below 100, propagation is poor. There have been days lately when even 17 metres didn't seem to be open. This is unusual. I haven't had much action, if any, on 10 and 12m in the past six months, so it would certainly seem that we are not only on a gradual decline from the sunspot maximum – which this time around has been a considerable disappointment – but we are on more of a downward plunge. I am glad to have had the chance to work a lot of new DXCC on 10m a couple of years ago when it was, as we Irish would say, literally “hopping”. But even that didn't last long.

The best chance of action has been on the 20 and 17m bands, with the cautionary disclaimer, as already indicated, that there have been days when 17m was not providing much in the way of fish for the DX angler.

All of this has not been helped by the fact that there have been no major DXpeditions during the summer. There were plenty of IOTA activations and special event call signs to be worked, but nothing in the way of decent “rare” DXCC

A couple of winters ago, I wrote about the fact that there were *twelve* DXpeditions running concurrently on a particular day. The resulting chaos cannot be described. On the narrower bands, like 17m, what happens is that one DXpedition's pileup is covering another's QRG. There simply wasn't enough space on the bands for so many activations. And you can only imagine the QRM. In these situations, everyone is under pressure to work as many of the rare ones as possible. A lot of amateurs are trying to squeeze in their radio time between work and family and other activities. Having a whole rake of DXpeditions running concurrently puts people under pressure to invest a huge amount of hours in a short timescale, leading to further anger and frustration and QRM on the bands.

Anyway, HF Happenings does not propose to solve this problem today. Rather I can only point out that this is a noticeable trend in the small number of years that I have been active. Of course, many of you will point out that summer is not conducive to making contacts on the low bands. Indeed, many of the top band and 80m operators abandon their activities during the summer. However, the days are shorter in winter in the northern hemisphere and the higher bands are not open as long.

Some of you have made hay while the sun shone in terms of upgrading or even cleaning the shack, while others have

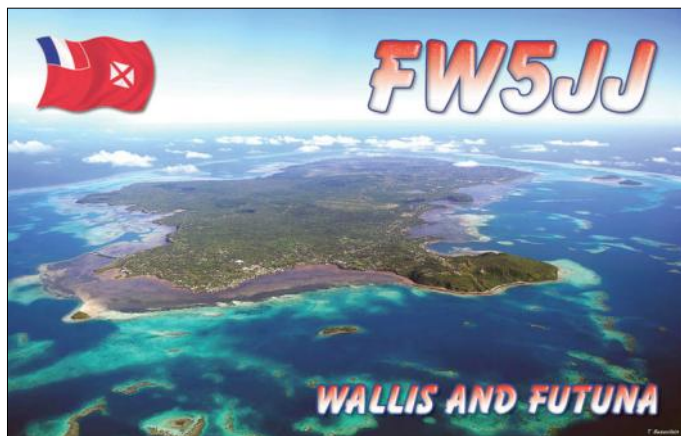
attended to vital antenna work. The luckiest ones have shiny new radios on the desk, and a new beam in the air, or perhaps a tower. This is the ideal time to get such upgrade work done. The weather and the short days in winter are far from ideal for outdoors work. There are no changes of any note here. I am still relying on the five-band two-element hexbeam for the bulk of my HF contacts, while the inverted-V system has had less call for duty during the summer, and the Antron 99 has hardly been used at all given the inactivity on 10 and 12m.

JT65

It is, of course, still possible to make some DX contacts, even when conditions are poor. As well as the aforementioned grey line propagation, which many of us have used to bag that DX station that was otherwise unworkable or inaudible, there are digital modes such as JT65 which allow the opportunity to test propagation for DX even in poor conditions and with low power.

Now I'll be honest here. I've tried JT65 a few times, and even though I made a QSO with Tasmania on my first night of trying on 20 metres with less than 10 watts, I wouldn't be likely to spend a lot of time using this mode. It's only for those who have lots of patience. The minimum time required for a QSO is six minutes – three overs from you and three from the DX station. And sometimes you miss an over, for various reasons, including QRM, and so sometimes the QSO can take eight or 10 minutes. Now this is extremely tedious to me. I know some of you out there love it. The amateur community in Ireland has a good presence on social media and I often read snippets about your exploits online. I find JT65 is a real “last resort” activity – the sort of thing you do when the bands are absolutely dead, the telly is rubbish and you've run out of good crime novels to read. And even then, there's always re-runs of Fawltly Towers!

JT65 is named after its creator, Joe Taylor K1JT, who is, according to the results of my Google searches, a bit of a genius. He is a retired 74-year-old former Professor of Physics at Princeton University. He is an astronomer and knows a lot about mysterious objects called pulsars, which are spinning stars in space. So he and I share a couple of interests, HI HI, although my mathematical capabilities amount to being able to count what little amount of money I have in my wallet at the end of each week.



I've had the pleasure of a QSO with Joe using JT65. He is known to use this mode regularly himself, which is a great joy for many of those who have logged him.

Those of you who have not tried JT65 should give it a go. It's very interesting. It's a nice mode to use if you are doing something else in the shack. I sometimes use it when I am busy doing some home brewing in the shack. It's not too difficult to keep up with a QSO over six minutes while concentrating on something else. I won't go into too much detail about how to use the software (that has been covered in excellent articles by Hugh EI9KF among others). Suffice to say that if this poor propagation continues, I may be launching the JT65 software a bit more often to hunt out some DX.

If it's speed you're interested in, RTTY might be more your thing. I do use PSK, but I find PSK31 a bit slow and tedious, so PSK63 is my preferred variant. The really adventurous, confident typists among you might even brave the "fast lane" with PSK125, but be warned – it's not for the faint-hearted!

Recent DX

There's not much to report under this heading, as you can imagine, for reasons already mentioned. One of the highlights of the summer was the addition of a new country on my 80m tally. It happened on the evening of July 19th, at 21:50 local time, which I think is probably one of my best DX contacts on 80 during the summer. I managed a QSO with S79HN in the Seychelles, on CW of course. If you've been reading previous columns, you will know that the vast majority of DX worked on 80 metres at this station were on CW. My antenna does not have much resonance above the middle of the band, but is sweet at the bottom of 80, with an SWR and an impedance that allow for the easy running of 400 watts with no return. I was delighted when I received confirmation on ARRL's Logbook of the World a couple of days later.

At the end of May, I managed a QSO on 20m RTTY with FW5JJ Jean-Jacques in Wallis and Futuna. This was a new country on digital modes for me. 5U5U in Niger on 10m SSB was a new band slot in June. Also in June, A71AE in Qatar was a new one on digital modes when I nabbed him on 15m PSK63. A61E in UAE gave me a new slot on the same band and mode. 3B8FA in Mauritius was another new country on digi modes when I worked him, again on 15m and again on PSK63. S79HN popped up on 30m CW and gave me a new country on that band too. Stan EI6DX was in the Seychelles in July and I was delighted to bag three QSOs with him on 30m and 20m. Christian F5UII was in French Guyana in late July and after a while trying, I eventually bagged him on 40m SSB for a new country on that band. The next morning, at 06.36 local time, I worked TI9/RA9USU (Cocos Island) on 30m CW for a new one on that band. A great deal of credit for that QSO must go to my "DX alarm clock", otherwise known as Declan EI6FR! The same station on Cocos Island gave me a new country on 17m CW the next day.

There has been quite a bit of activity lately from the station ET3AA in the university at Addis Ababa, Ethiopia. Thanks to this activity, I was able to work Ethiopia as a new country on 30m in July. FY/F5UII was in the log again towards the end of July as a new band slot on 20m RTTY. Chris 9Y4D in Trinidad and Tobago gave me a new country when I worked

him on 15m SSB in early August. He was easy to work, and seemed happy to put me in the log. HC2/LU9EFO in Ecuador gave me a new band slot on 17m SSB, while OH0JV in Aland Island gave me a new slot on 17m CW.

I was delighted on August 7th when calling CQ on 20m SSB to have the well-known commercial airline pilot and radio amateur Jerry PH9HB/AM call me. We had a chat for about five minutes. Many of you know aviation is another interest of mine. Jerry was flying a Boeing 737-800NG for Transavia airlines, flying from Athens to Eindhoven. At the time of our QSO, he was cruising at an altitude of 38,000ft (11,600m). He told me his equipment was a Collins HFS9000 radio (commercial airliners are fitted with HF radio equipment, although many of the short hop flights within Europe do not use them). The antenna was mounted in the tail of the aircraft. He was running 400w. There was no QSB on his signal and we exchanged 59 reports.

The last QSO of note up until the time of writing this was A75GT in Qatar who gave me a new slot on 17m SSB. By the way, the previously indicated activation of SV/A Mount Athos by a team of four Latvian operators did not proceed as they could not get permission.

VY0M was active from Melville Island, a brand new IOTA (NA-248) in early August and I was delighted to manage a single QSO with him on 20m SSB. Thankfully he was working by number. I wouldn't have had a chance otherwise, such was the extent of the pile-up.

Forthcoming DX and DXpeditions Chesterfield Islands FK/C

There is no major update or change to the TX3X activation of Chesterfield Reef from October 1st to 12th. This rare one is number 22 on the Most Wanted DXCC list. An international team of 12 operators will be on the island for 12 days.

V73D Marshall Islands

The German group that activated T30D Western Kiribati in 2014 has decided to go to Majuro, Marshall Islands, in October 2015, from 13th to 28th. The team hopes to operate using the call sign V73D. All flights are booked and accommodation is reserved. The 12 team members will make a serious effort on CW, SSB and RTTY from 160 to 6m. <http://v73d.mydx.de>

FJ St. Barthelemy

Martin G4XUM, Rich M5RIC, Stewart GM4AFF, Kelly N0VD and possibly others will be active as FJ/homecall from Saint Barthelemy Island (NA-146, DIFO FJ-001, WLOTA 0377) between October 20th and 27th. The team will be active as TO4K during the CQWW DX SSB Contest (October 24-25th) as a Multi-2 entry. QSL TO4K via G3NKC. Listen for QSL routes for operators using FJ/home call.

Willis Island VK9W

Willis Island, off Australia, is a separate DXCC entity and will be on the air from November 14th to 23rd thanks to an international team of eight hams using the call sign VK9WA. Willis has moved up to 32nd place on the Clublog most-wanted list. The island is only four acres in size and is uninhabited. They will operate high power CW, SSB, and RTTY on 10 through 80m (and possibly 160m) for 10 days (subject to weather, etc.). The primary focus will be

providing all-time-new contacts with this highly-demanded, rarely-activated DXCC entity. www.vk9wa.com.

South Sandwich and South Georgia VP8/S and VP8/G

As mentioned previously, in January 2016 a team of 14 DXers will depart from Stanley, the Falkland Islands, on the venerable RV Braveheart and embark on a 37-day voyage encompassing South Sandwich and South Georgia Islands. They plan to activate South Sandwich island first as it is the #3 most wanted DXCC in Clublog. They will be active on South Sandwich for eight full days, weather and sea conditions permitting. They will then voyage to South Georgia Island, the #8th most wanted DXCC entity. They will activate South Georgia Island for eight full days before returning to the Falkland Islands. Including set-up and tear-down time, they plan to be on each island for 10 days. <http://www.intrepid-dx.com/vp8/>

P5 North Korea

Dom 3Z9DX is pressing ahead with his plans to activate North Korea P5, and since our last issue he has asked for donations towards a high-end transceiver for his activation, which, sadly, will be confiscated by the authorities there after he goes QRT. But the planned activation is not without controversy. The well-known DXpeditioner and founder of the Intrepid-DX group, Paul Ewing N6PSE, has penned an article in which he says that, while he wishes Dom 3Z9DX well with his attempt, an approved activation of North Korea is unlikely. Now I don't like getting into politics, but this one is certainly interesting and worth reporting upon. One cannot help getting the feeling that perhaps Paul N6PSE is a tad envious of Dom's apparent success in getting this far with his plans, but at the same time Ewing makes some stark observations about previous activations, and indeed the many unsuccessful attempts to put P5 on the air. You can read the whole article online, but here is just a taste:

If Dom-3Z9DX is able to get on the air from the DPRK, Wow! He would have accomplished a true miracle and accomplished something that so many leading DXpeditioners before him were unable to accomplish.

If Dom is not able to get on the air, he will be joining the long list of leading DXpeditioners who did their best and were not able to achieve what they set out to do.



Paul N6PSE

So I wish Dom-3Z9DX best wishes for his effort but I will not be surprised if his gear is seized and he is sent on his way. That is their track record with so many that tried before him. Unless Kim Jong Un gets as excited about amateur radio as he has been about American basketball, any amateur radio activity is just not likely to happen.

It will be interesting to see where this leads. Don't forget that N6PSE has been making efforts towards a P5 activation with another Intrepid-DX member. If Dom gets there first, he will perhaps be stealing Paul's thunder. In any event, the amateur radio community around the world is unlikely to care who activates it, so long as they can get a QSO and put the number one most-wanted DXCC in the log. It has to be hoped that, whatever happens, any possible activation next year might "open the doors", so to speak, for more similar operations. Ultimately the lesson of history would appear to suggest that N6PSE is right and Dom's activation will not go ahead. But then which of us could have dreamed of an E3 Eritrea activation, or a 7O Yemen activation, just a few short years ago? Everything changes. There may well come a time in the future when P5 is no longer rare. I hope those days will come.

V6 Micronesia

Naoki, JS3LSQ plans activity from Pohnpei, Micronesia as V63WJ from September 28th to October 4th, 2015. QRV mostly on 10 & 15m RTTY. QSL direct or via JARL bureau.

YJ Vanuatu

Robert, DL7VOA will be active holiday-style from the Eratap Beach Resort, Port Vila, Vanuatu as YJ4AO between December 27, 2015 to January 13, 2016. <https://www.qrz.com/db/yj4ao>

FT4JA Juan de Nova

Since our last issue, a DXpedition has been announced to FR/J Juan de Nova in 2016. The team that activated Tromelin in 2014 as FT4TA will be active with the call sign FT4JA from 31st March to 14th April next year. Juan de Nova is 6th on the Clublog most-wanted list. www.juandenovadx.com.

5H3 Tanzania

Chas, NK8O (ex-5H9CP) will be active from Zinga, Tanzania as 5H3DX beginning September, 2015. QRV mainly on CW, 20-6m; holiday-style. Chas says this will be the first of many trips to Zinga, and he hopes to maintain the 5H3DX callsign indefinitely. QSLs will be via LoTW and eQSL. Paper QSLs via NK8O.

XX9 Macau

Polish operators SP9FIH and SP2FUD will be active from Coloane Island AS-075, Macau between October 16-28, 2015. QRV on 40-10m, SSB & RTTY. Callsign will be known first day of operation. xx9.dxpeditons.org

EJ7NET

By the time you read this, the EJ7NET activation of Gola Island off Donegal (IOTA EU-121) will either be in full swing or will be finished. If you hear us, don't forget to give us a call!

That's it until next time. Let's hope that band conditions improve between now and then, especially when the rare ones are active.



MREN Activation of Blacksod Lighthouse 2015

Padraic Baynes EI9JA

Blacksod lighthouse was built in 1866 and is located on the pier at Blacksod on the Mullet Peninsula in NW Mayo. It was built entirely from red granite sourced locally and is one of only two “square” lighthouses in the world. Its location is 54° 05’ 09” N, 10° 03’ 06” W. The lighthouse is now automated and is maintained by Vincent Sweeney, and it has a helipad for the rescue helicopter and the service crews. It became famous in history because of a weather report, given from the lighthouse by Ted Sweeney, on 4th of June 1944, which influenced the deferral of the D-Day invasion of Normandy by one day.

The 15th and 16th of August this year was designated as International Lighthouse and Lightships on the air weekend. The objective of the event is to promote public awareness of lighthouses and lightships and their need for preservation and restoration, and at the same time promote amateur radio and foster international goodwill.

Three members of the Mayo Radio Experimenter’s Network, Dominick Curtin EI9JS, Jimmy Kelly EI2GCB and myself EI9JA, set out for Blacksod early on Saturday morning, caravan and mobile tower in tow. Weather for the weekend was promised fine, so we looked forward to the event.

When we arrived we set about assembling the antennas and setting up the shack in the caravan, of course the barbecue was put on and was heating up while the work went on. A spider-beam and multi-band doublet were attached to the tower and a six-meter yagi was set up on another mast mounted at the side of the van. A vertical antenna for 30-10m was attached to the railings and all coax feeders were connected to the sockets on of the caravan.

An Icom 7200 was used for the LF bands and a Yaesu FT897 for the VHF & HF. Laptops and a dongle put us on the web. We used EI0M/P as our call sign, and the international designator for the lighthouse is IE0008.

Meanwhile two other members of our club arrived, Gerry Cregg EI4GD and Brendan Minish EI6IZ to help out with the setup and operations. While the finer adjustments were being made, Jimmy EI2GCB had the food cooking and the beautiful smell attracted the attention of the curious public and the dogs around.

Gerry Cregg EI4GD took the hot seat and had a pileup on 20m in a few minutes while the finishing touches were put to the 6m setup. When we got on 6m we found the band open to Europe and had another pileup going with stations looking for our rare square IO44XC. The 6m opening lasted a few hours.



The two stations then operated HF on CW & SSB, concentrating on lighthouses and lightships into the late hours of Sunday morning before fading out. PSK provided a few lighthouses before grey line brought the bands back to life again.

The full tide in the morning did not provide a mackerel for breakfast, even though some early risers had a few fish in their buckets, (it was not for the want of trying but we obviously were using the wrong bait!). The two stations sprung into life once more with plenty of activity on the bands. Stations were worked all day long with pileups mainly on 20m and 40m.

By 17.30 our mouth and brain were not communicating properly due to lack of sleep and dehydration so it was decided to start dismantling the stations one at a time. By 19.30 we had the last pieces back in the vehicles again. This activation was a great success again and the location was superb. We have never had as many visitors enquiring about our operation, many of whom had never heard of amateur radio and enquiring about the history of the lighthouse. They were impressed! The caravan and tower worked well and provided an excellent operating environment.

We would like to thank Vincent Sweeney, the Lighthouse Keeper, for the use of the facilities in the lighthouse. He has been very generous and helpful to us over the years and without his contribution this event would not be possible.

Louth Agricultural Show—14 June 2015 EI0DAR’s Hexbeam





Near Vertical Incidence Skywave (NVIS) Operation

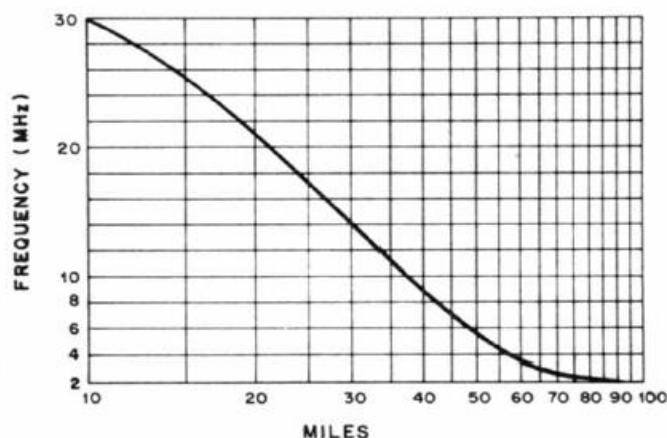
Steve Wright EI5DD

NVIS is a propagation mode that utilises high angle radiation to send a signal straight up to be reflected back to earth via the ionosphere for effective short to medium range communication. The antenna has to be designed to radiate signals vertically, the frequency must be chosen to utilise a frequency below the critical frequency to facilitate reliable omni-directional communications over a radius of 200 miles at most. This mode of operation makes NVIS ideal for National and localised communication during disasters or other emergency situation. The military has used NVIS for decades to provide short haul communication with other units on the ground. But before entering into NVIS communications a little theory.

Propagation of a Radio Wave

Line of Sight, where two antennas are in line of sight between antennas visible to each other. This mode is generally used with VHF and UHF stations.

Surface Mode or Ground Wave, is generally used where frequencies below 3.8 MHz are used. These signals follow the curvature of the earth and distance is dependent on ground conductivity. The better the conductivity, the less the attenuation of the transmitted signal.



The graph above shows the relationship between frequency and distance travelled using ground wave. This distance would be determined by the conductivity of the path between two stations. The lower the frequency, the less the resultant attenuation over a defined path.

Ionospheric Propagation, where the transmitted signal is refracted back to earth via the ionospheric layers such as E, F, or F1 and F2 Layers. **Fig.2** shows a dead zone where no signal will be received from the point where the Ground wave signal disappears and the signal from the Ionosphere returns to earth.

DX operation dictates the necessity for a signal to be radiated at the lowest possible angle to gain the greatest distance on the earth's surface shown by (3). Generally a simple rule of thumb for the dipole antenna, is to mount it a minimum of a half wave above ground to achieve the lowest angle of radiation—See **Fig 3**

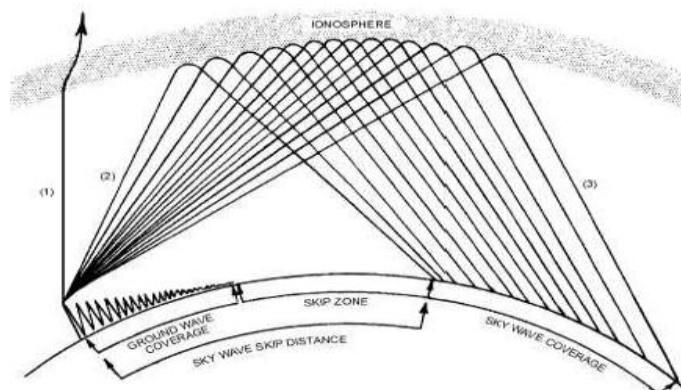


Fig.2 Ground Wave & Sky Wave coverage

Many operators are unable to string the dipole antenna at a half wave above the ground and therefore experience much higher angles of radiation and consequent less of a distance covered.

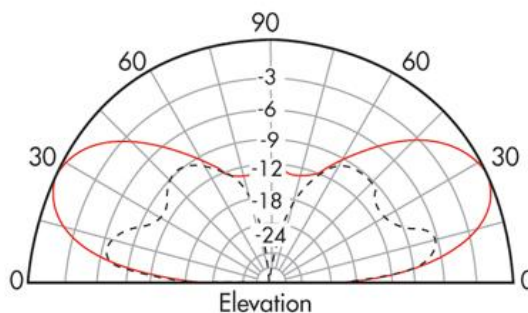
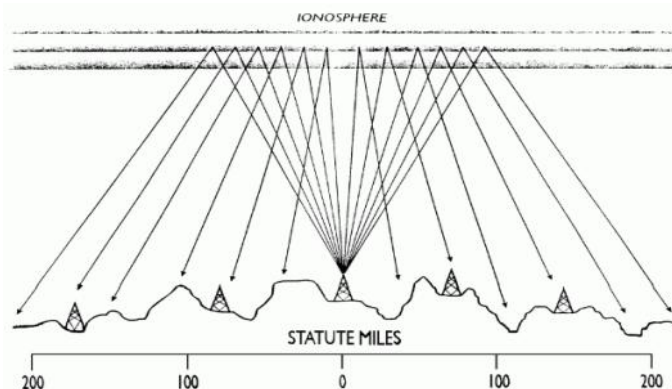


Fig 3. Radiation pattern of dipole at a half wavelength above ground

Using NVIS Successfully

To achieve a reliable communication path in a circle with a radius of 250 miles one has to be able to radiate a signal, from the antenna, at typical angle of 60 – 90 degrees and thus returning from the ionosphere at a similar angle covering 0 – 250 miles. This will fill in the skip or dead zone See below: Ground wave has to be minimised to avoid interference with the returning wave. Imagine pointing a hose at the ceiling and observing the way in which the water returns to the ground. If pointed vertically it will fall within a certain area as opposed to pointing it at an angle where it will fall some distance further away. Obviously there will be a signal received in the immediate ground wave vicinity of the transmitting station.



Choosing the Correct Frequency

It should be noted that the closer the operation is to the equator the higher the frequency that may be used but, for practical purposes at our latitudes the bands normally considered would be 160, 80, 60 and 40 metres. A “higher” frequency, such as 40 metres, would be used during the day, a “middle frequency, such as 60 metres, during afternoon and evening and a “lower frequency, such as 80 metres or even 160 metres, during the night. Frequencies used at given times would be dependent on seasonal variations and period of the sunspot cycle. The critical frequency is the key to successful NVIS working.

Critical Frequency (Fo) is the highest magnitude of frequency above which the waves penetrate the ionosphere and below which the waves are reflected back to earth from the ionosphere. Its value is not fixed and it depends upon electron density of ionosphere at any point in time.

The critical frequency of the F2 Layer is the highest frequency that a signal transmitted vertically will be returned to earth and anything above this will be transmitted into space.

The Ionogram is the best tool for determining the state of the ionosphere at any given time of the day. A transmitted signal is swept across a frequency range and the time taken for it to return to earth determines the height of the layer in question. **Fig 5** Shows a basic ionogram.

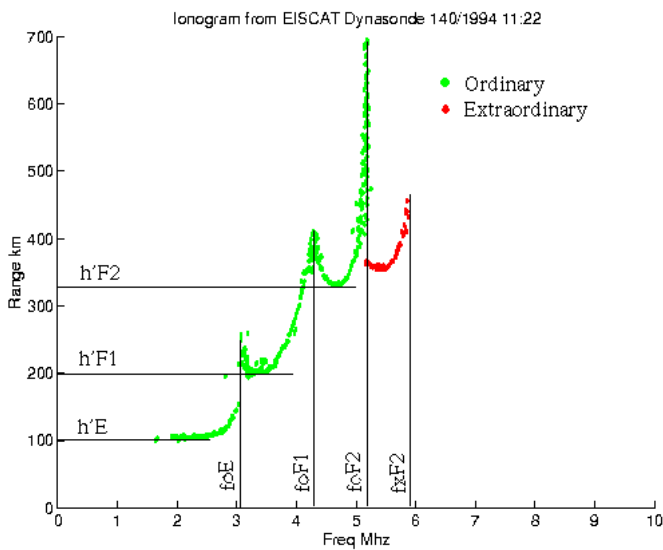


Fig.5 The basic Ionogram showing both heights and critical frequencies of the ionosphere at a given time of day

As a wave approaches the reflection point, its group velocity approaches zero and this increases the time-of-flight of the signal. Eventually, a frequency is reached that enables the wave to penetrate the layer without being reflected. For ordinary mode waves, this occurs when the transmitted frequency just exceeds the peak plasma frequency of the layer. In the case of the extraordinary wave, the magnetic field has an additional effect, and reflection occurs at a frequency that is higher than the ordinary wave by half the electron gyrofrequency. A bit off topic but will explain why refraction back to earth occurs at a slightly higher frequency than the FoF2.

Choice of antenna.

As previously mentioned the requirement of a dipole antenna for DX is to mount it at least a half wavelength above ground. By lowering the antenna the radiation angle becomes higher until an optimum point is reached where the angle of radiation is almost vertical.

The Ionogram in **Fig. 6** shows that the ideal frequency of operation for NVIS would be around 5.6 MHz. The heights of the layers are shown in the left hand column E-Layer is 100 Km, the F-Layer 200 Km and the F2 Layer 361 Km. The FoF2 (Critical Frequency) is 5.6 MHz. The parameters on the bottom left of the ionogram denote the communication distance for a given MUF. For example, a path of 600 Km the ideal frequency would be 7 MHz.

Note: For NVIS operation, the optimum frequency is generally 10% lower than the critical frequency FoF2.

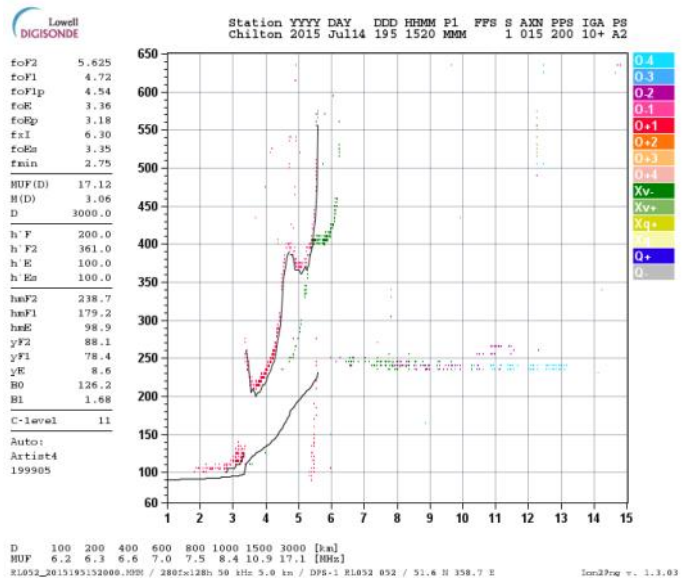


Fig. 6 Ionogram at 15:20 on the 14th July 2015 from http://www.ukssdc.ac.uk/ionosondes/view_latest.html

As the height of the dipole is raised above a half wavelength the angle of radiation is lowered but by reducing the height between a quarter wavelength to an eighth wavelength, the angle radiation increases. See **Fig 7**, and compare with **Fig 3**

NVIS antennas are always horizontal as it is not possible to obtain a radiation angle of 90 degrees or thereabouts from a vertical antenna.

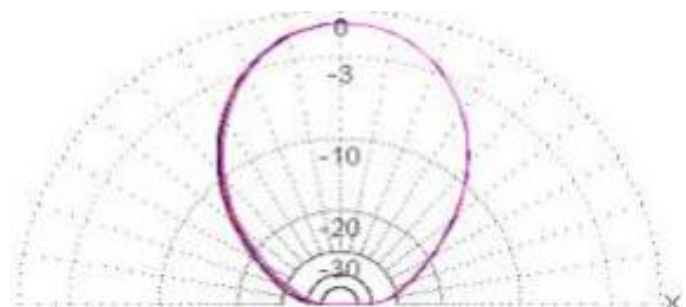


Fig.7 Elevation radiation pattern of a dipole antenna at 1/8 wavelength above ground

As previously mentioned the ideal height of the NVIS antenna is around a quarter wavelength above ground although it will work if lowered but efficiency may be sacrificed although noise levels may be reduced. The placement of a counterpoise may enhance the efficiency of the antenna if the conductivity of the earth is poor.

The dipole and the Inverted Vee antenna can provide an excellent radiation pattern for NVIS and short skip conditions. To achieve this characteristic the antenna should be no higher than 0.3 wavelengths above ground. A useful version of such an antenna for 80, 60, and 40 metres would be to have links to connect each LF section - **Fig. 8**

With the required height of the dipole being close to the ground it is easy enough to change the jumpers for the desired band.

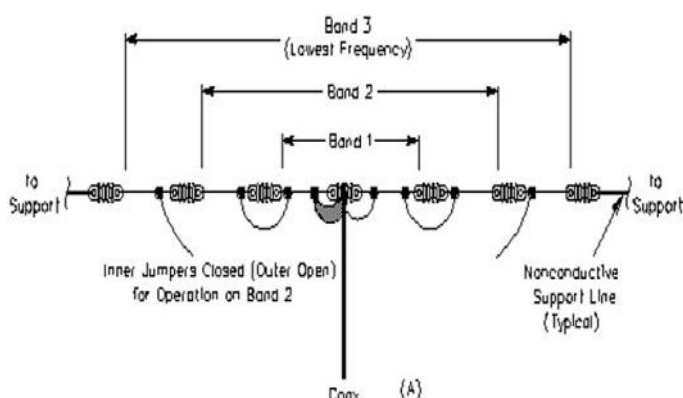


Fig. 8 Multiband Dipole with Jumpers

The Horizontal Loop Antenna

The G4HOL Loop (see Technical Topics on www.galwayvhfgroup.blogspot.com) with a circumference of 283 ft or in a horizontal square configuration strung 20ft above ground will provide an excellent NVIS coverage of Ireland and indeed into the UK. This antenna gave excellent results across Ireland where a dipole at full height heard weak watery signals. This antenna will tune on all bands from 80 to 10 metres if mounted at 20 ft it will favour NVIS on 80 and 40 metres. The radiation pattern is shown in **Fig. 9**

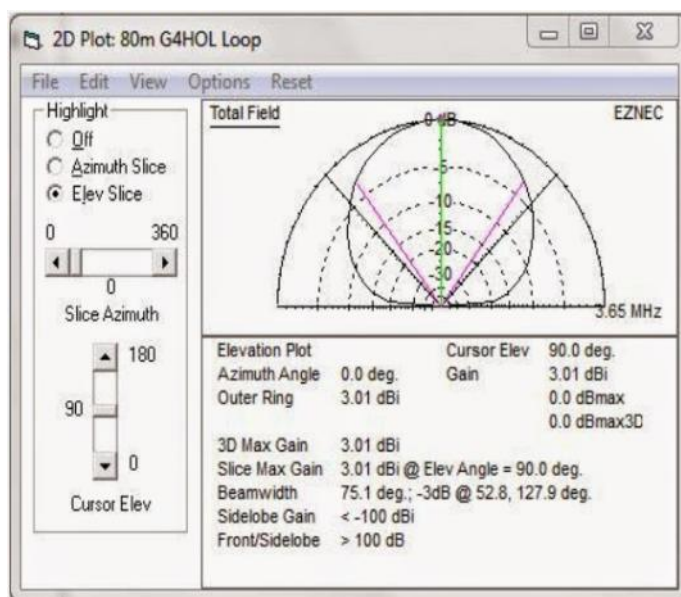


Fig. 9 NVIS characteristics of the G4HOL Loop antenna strung 20ft above ground

Other antennas that may be of historical interest are the Shirley antenna and the Jamaica antenna which were used during the WWII with impressive results. These antennas were basically two phased dipoles strung 20-30ft above ground. **Fig 10** shows the configuration of the Shirley antenna.

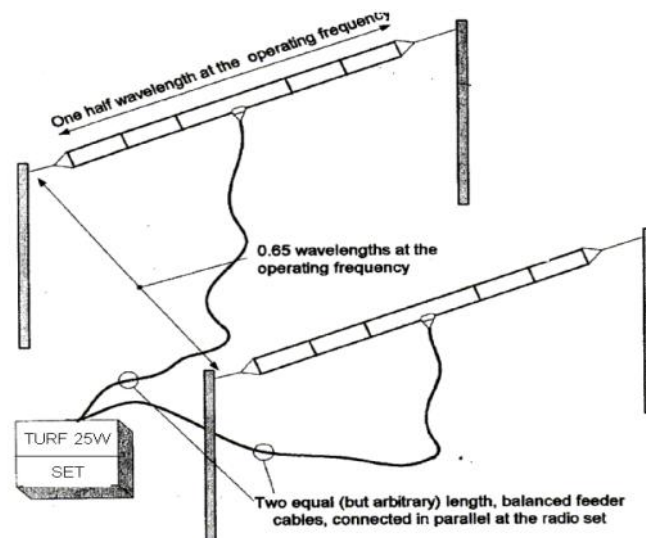


Fig. 10 The Shirley NVIS Antenna

Portable Operation is easily achieved due to the fact that the antennas are not strung high above ground and it is possible for a one man operation to erect the antenna. It is possible to use a slanted 8 metre fibreglass pole with 33 ft of wire wrapped around it and fed at the bottom via an ATU **Fig. 11**.

A set of counterpoise wires 5% longer than the wavelength in use and added beneath the antenna. Conor, EI4JN, reported good results and noted an enhancement in signal strength from semi-local stations whilst using this arrangement. Mobile operation using NVIS antennas during WWII was widely used as its potential for communicating with troops across a local area had been realised.

Many will have seen military vehicles with the antenna pulled diagonally across the main body of the vehicle using the ground plane of the vehicle body to force the radiation of the antenna skyward.

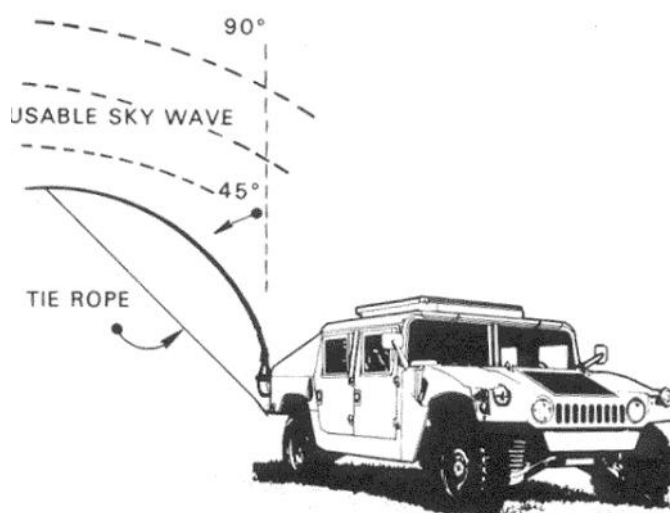


Fig. 11 Portable operation with 12 turns of wire wrapped around a 8m fibreglass pole tuned with an ATU



Fig. 12 Mobile NVIS Loop antenna supplied by Barrett Communications

Other systems employ a loop antenna using the framework of the roof rack of the vehicle as a ground plane. Barrett Communications and South Midlands Communications supply roof-mounted loop antennas although these antennas are costly and not within the reach of the average radio amateur. **See Fig. 12.**

Among the many advantages of NVIS :

- NVIS covers the area which is normally in the skip zone, that is, which is normally too far away to receive ground wave signals, but not yet far enough away to receive sky waves reflected from the ionosphere.
- NVIS requires no infrastructure such as repeaters or satellites. Two stations employing NVIS techniques can establish reliable communications without the support of any third party.
- Pure NVIS propagation is relatively free from fading.
- Antennas optimised for NVIS are usually low. Simple dipoles work very well. A good NVIS antenna can be erected easily, in a short amount of time, by a small team (or just one person).
- Low areas and valleys are no problem for NVIS propagation.
- The path to and from the ionosphere is short and direct, resulting in lower path losses due to factors such as absorption by the D layer.
- NVIS techniques can dramatically reduce noise and interference, resulting in an improved signal/noise ratio.
- With its improved signal/noise ratio and low path loss, NVIS works well with low power.

Disadvantages of NVIS operation include:

- For best results, both stations should be optimised for NVIS operation. If one station's antenna emphasises ground wave propagation, while another's emphasises NVIS propagation, the results may be poor. Some stations do have antennas which are good for NVIS (such as relatively low dipoles) but many do not.
- NVIS doesn't work on all HF frequencies. Care must be exercised to pick an appropriate frequency, and the frequencies which are best for NVIS are the frequencies where atmospheric noise is a problem, antenna lengths are long, and bandwidths are relatively narrow for digital transmissions.

Due to differences between daytime and night time propagation, a minimum of two different frequencies must be used to ensure reliable around-the-clock communications.

Practicalities

On many occasions, the Galway VHF Group used 80m ground wave to achieve coverage in mountainous areas of Connemara or the Burren. Whilst the results have been impressive in a small area using lower frequencies, attenuation has been noticed and also interference from UK operators who are generally not willing to move from the frequency once they settle upon it. NVIS may eliminate this problem and improve and expand the general coverage locally and reduce distant continental interference.

For national coverage NVIS is the obvious choice linking most areas of the nation together on the one net within a 250 mile radius of the control station. Some individuals may be inadvertently NVIS due to the fact that their antennas are not too high from the ground.

The loop antenna had been used for many years by EI5DD resulting in excellent results with just 5 watts over paths across Ireland and also into the UK. The 40m IRTS news was received at strength 9+, in Galway, 99% of the time throughout the year.

Ongoing experimentation will be carried out over the next year on fixed, portable and mobile operations using NVIS techniques 160, 80, 60 and 40 metres.

The Journey from Amateur Radio to Electric Car

Those who work Ronnie EI9ED on the air and who associate him with VHF and repeaters may not know of his other passion - the design and building of his own personal electric car. This one has an electric engine which Ronnie built himself.

The photo below shows the “master engineer” with his car.

Congratulations Ronnie!





The Sky's The Limit

Brian Canning EI8IU

In late July 2015, Fergus (EI6IB) was contacted by the Tibohine Flying Club in Co. Roscommon. The club had just received some radio equipment from Shannon Airport to set up an air base station and they needed some assistance and advice on how to set it up. Fergus contacted myself and we both headed to the air strip located off the N5 near Ballaghadereen, Co. Roscommon.

We were met by James Morrisroe who runs the flying club. The equipment received turned out to be a separate transmitter and receiver from Park Air Electronics, both from the 5000 series. The club had been allocated the frequency of 120.00MHz and it was our task to adjust both TX and RX to this frequency. It sounds relatively simple, i.e., "just turn the dial" but as can be seen from the photos, there are no dials to turn.



Park Air Electronics TX and RX

Unfortunately no manuals came with the set so we contacted PAE who were very helpful. They explained that the set was relatively old but manuals were still available. Because there was only one antenna available for use we needed to install a coax relay to stop transmissions damaging the receiver.

Ordinarily, it should not be an issue changing the operating frequency as they are crystal controlled and there are a series of DIL switches for this purpose. We decided to bring both units to my QTH as it would be easier to work on them and carry out testing. On opening the units we could see the high quality of both units and the level of workmanship involved in making them. Both rigs are modularised for easy expansion and replacement of parts.

The transmitter was no problem to set to 120.00MHz and it was possible to fine tune it with some adjustment to some potentiometers. The receiver, however, was a different matter. We discovered that there were far more adjustments needed to be done and we didn't have the equipment to do this. We advised James that the cost of professionally retuning the equipment was too expensive and that a new air-band transceiver may be a more realistic option. Although we were disappointed that we couldn't complete the frequency adjustment it made sense to go for a new transceiver.

An Icom IC-A110 Euro was sourced at a reasonable price. However, that wasn't the end as an air-band antenna was purchased (from Long Communications) and this needed to be erected, connected and tested.



High Quality Modularised Board

When the Icom arrived, myself, James (my junior op) and Fergus (EI6IB) again headed for Ballaghadereen confident that the "project" would finally be brought to a successful conclusion. The Shannon Basin Radio Club provided the coax and between us a set up a pole, mounted the antenna, checked the SWR and connected the coax.

The Club also provided an extension speaker which helped with the audio quality. A quick report was requested from Ireland West Airport Tower who confirmed the received audio was perfect. One further test remained — we needed to make contact with a flying aircraft. James Morrisroe and James (junior op) took off in one of the microlights. Good reports were received from both sides while they flew at approximately 1000 feet around Co. Roscommon.

Weather was perfect for flying and it was possible to see Croagh Patrick rising majestically in the distance. When they landed it was time for a final word of thanks from both sides, (ours being for the chance to see Roscommon from the air) and a hand shake.

Even though it wasn't amateur radio it still demonstrates that our knowledge and experience may be useful to clubs and hobbyists who are not involved directly with amateur radio.

For more information on Tibohine Flying Club please see www.tibohineflyingclub.com or contact James Morrisroe 086 250 0153

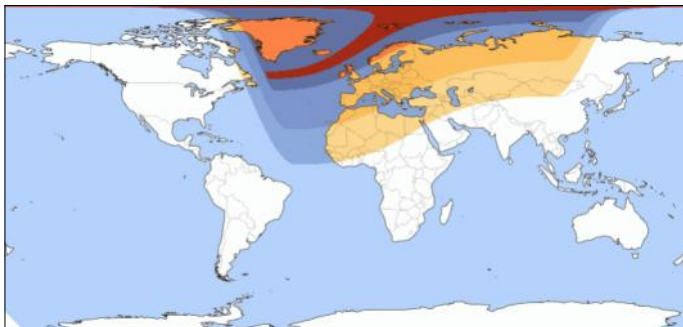


EI6IB, James Morrisroe and EI8IU

RSGB Public Radio Propagation Experiment

David Kirwan and John Ronan EI7IG

Earlier this year (2015) David was in the early stages of a M.Sc. project which required building an automated SDR receiver for the purposes of receiving signals from Jupiter [7]. John EI7IG thought this was a perfect opportunity to test what components had been assembled so far to verify that everything was working as it should.



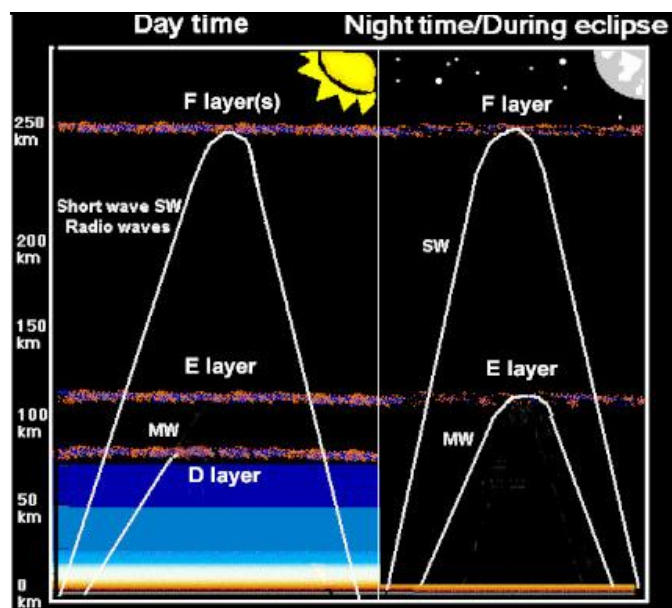
Partial Solar Eclipse 20th March 2015 [6]

In February 2015, Steve G0KYA put up a note on the RSGB forums and also on his own weblog with an announcement from the RSGB Propagation Studies Committee [2] about a public MW experiment to coincide with the March 20th partial solar eclipse. The UK and Ireland would witness more than 90% totality giving an opportunity to perform simple experiments to demonstrate the Sun's effect on Earth's ionosphere, and determine how this ionisation affects the propagation of radio signals.

In short, MW radio stations which are located more than 500 km away are unlikely to be propagated during daylight hours due to absorption by the D layer. However, as we all have learned, the D layer does not exist during the night, as a result these radio signals are free to reflect from the higher E and F layers. This effect should also be possible to observe during a solar eclipse with a high totality percentage, as would occur on the 20th March 2015.

G0KYA listed some MW stations at various locations in the United Kingdom, in Europe and also in Iceland [2][3]. The experiment called for choosing a station which is transmitting in the MW range and is also capable of being heard at the listeners location during the night time. This station should not be capable of being heard during the day time, the experiment called for a station which is further away than 500km. The chosen radio station should then be tuned in to coincide with the beginning of the solar eclipse. The station receive power should be plotted against time. It was expected that the signal strength of the radio station should be strongest to coincide with the solar eclipse maximum, and similarly drop off once more as the eclipse reached its end.

Given the restrictions of the reception site, and time available, Davis elected to run a long wire in the direction of the desired station. The existing HackRF [5] receiver was used despite being advertised as having an operating range between 10MHz and 6GHz. In practice, it was possible to receive signals down to about 500kHz by ignoring the limits imposed by the firmware.



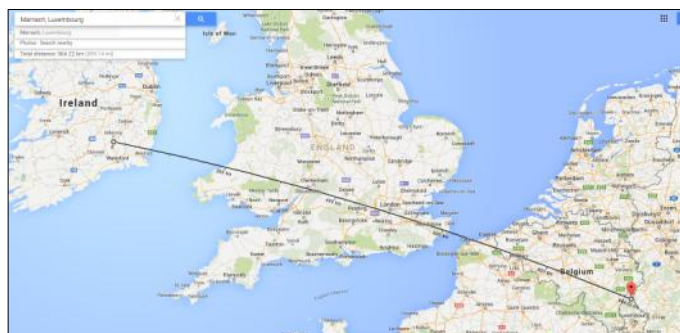
How medium wave (MF, 300 kHz to 3 MHz) and short wave (SW, 3-30 MHz) radio waves can be reflected/refracted from the different layers of the ionosphere during the day and during an eclipse or at night.

Comparison of MW radio signal propagation during day and during a solar eclipse

Methodology

The following methodology was followed during this experiment:

- the antenna was a copper wire 80m long attached to a long wire antenna terminator with an SO239 connector.
- the listening site was longest in the East-West axis and having the receiver positioned at the far west end of the site was most convenient. For this reason a radio station situated in an easterly direction was selected.
- the antenna was aimed in the general direction of the radio station chosen and simply placed on the ground.
- the HackRF receiver was tuned to the chosen radio station [8]. The AGC was disabled to get accurate power results.
- 2 MHz bandwidth of the spectrum was recorded during the entire length of the solar eclipse.

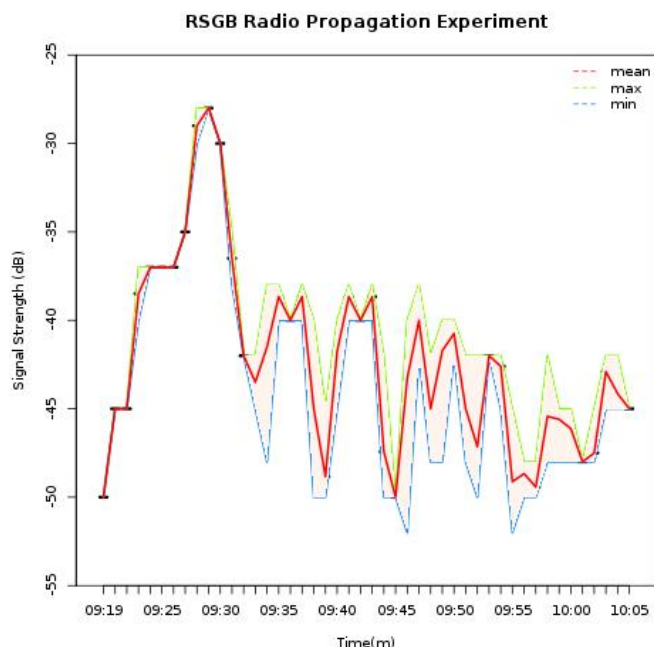


Location of listening site and radio station

- the signal strength of the radio station was plotted for the duration of the eclipse.

The chosen radio station was Radio China International (1440kHz) which was a powerful signal during the night time despite it being transmitted from Marnach in Luxembourg, at a range of 950km. As the eclipse neared 20% totality the signal slowly began to emerge from the background noise which was -70 dBm. The signal strength rose steadily to -28 dBm at the eclipse maximum point. It then fell in strength once more to average at -45db for the remainder of the eclipse before finally returning to the original value. The signal could no longer be heard once the strength went below -55dB.

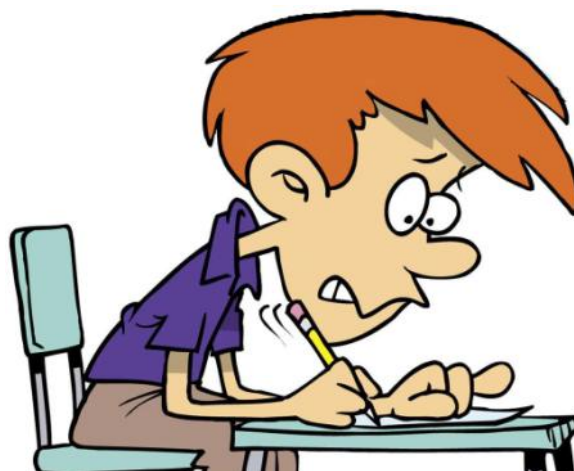
At the time of the experiment, the specifications of the HackRF were not guaranteed below 10Mhz, though this has since been revised down to 1MHz. In practice, it does work as low as 500kHz, as long as care is taken in its use. Finally, the results of the experiment were submitted to the RSGB Propagation Studies Committee [1] for inclusion in the overall experiment results.



Station signal strength during the eclipse

- [1] <http://forums.thersgb.org/index.php?threads/partial-solar-eclipse-propagation-experiment-march-20th-2015.125>
- [2] <http://www.g0kya.blogspot.ie/2015/02/partial-solar-eclipse-propagation.html>
- [3] <http://www.rsgb.org/eclipse-2015>
- [4] <http://www.nrcdxas.org/articles/BevAnt0876.pdf>
- [5] <http://greatscottgadgets.com/hackrf/>
- [6] <http://www.timeanddate.com/eclipse/in/ireland/kilkenny>
- [7] <http://radiojove.gsfc.nasa.gov>
- [8] <http://english.cri.cn/>

Looking to sit the HAREC exam?



The **South Eastern Amateur Radio Group** is pleased to announce that they are looking at the possibility of running a theory course for the HAREC examination.

Depending on numbers interested we hope to start the course in September/October. For anyone who is interested, or if you know someone who wishes to do the course with a view to sitting the exam, please contact Mark EI7IS or Seany EI2HZB

For up-to-date news about the South Eastern Amateur Radio Group and our actives you can check our website **www.searg.com**, and you can also follow us on Facebook and Twitter.



South Dublin Radio Club goes Satellite Hunting for SO-50



I know it's up there somewhere! - John EI7BV searches while Chairman EI7GUB watches!



Why am I not getting a signal?



"Point it that way Joe", says Séan EI7CD



Let's double-check the times



You just have to aim it properly



One of us is bound to hear something



Excerpts from the HX files with Pat Fitzpatrick EI2HX - Excerpt 032

This project is the construction of a stand-alone transmitter intended to be permanently installed either onto my car or on the inside the car (probably the boot).

There are a couple of suitable places already in the engine bay well away from the exhaust of the engine, as any spray would likely be forced up into the engine bay by the wheels. (Bear with me for this one folks I have not stopped taking my meds). A simple test was done to find out what mess there might be. I used a couple of empty margarine containers (Flora light if you must know) and covering them with some large white sticky labels. The car chassis already had some bolt holes and I used these to attach the margarine containers.

After a few days driving around with some long and short journeys and a lot of rain (which was no harm for this test), I looked in the engine bay and found that one of the containers had disappeared. The stickers that remained were filthy and pitted, the other two were still there and only had some slight staining and showed no signs of pitting (stone damage). At the rear of the car, unfortunately, only the bolt remained, therefore this area could not be used. So I had a couple of spots to choose from; either the boot or the engine bay.

It was whilst on one of my visits to Adrian EI2KJ, after the dog walking and over the usual cups of tea we discussed the project. Adrian's son, Dan, mentioned that he had something that might be of use to me and sure enough it was. The something he had, turned out to be an audio amplifier from a Volvo car which can be seen in photo 1. It looked to be the right size and was all heatsink. Removing the front and back panels revealed that the unit could be split in two.

Photo 1 shows the Amp but without the inside parts. In photo 2 there is some of the parts to be used; the main items are the ATV transmitter (middle top) and the 10 watt amp (bottom right). The item on the top left is a dummy load that can be attached to the antenna end of the coax when the unit is not in use.

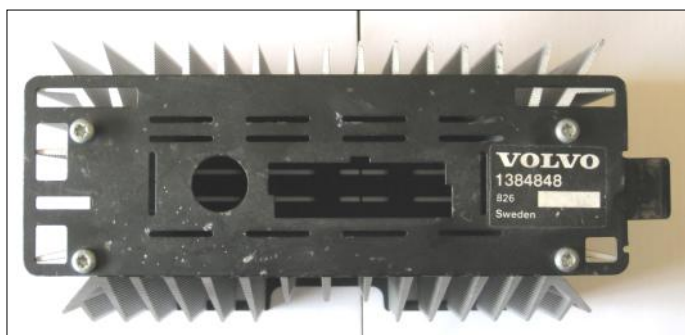


Photo 1: Volvo audio amplifier

Bottom left is the new front panel with many new holes having had to be drilled. Whilst the box was the right size to contain all the parts, it became clear quite quickly into the build that due to close proximity of items the possibility of shorting was very possible. So after a dig in a bin or two, a 7 pin multi socket was found (top right in photo 2) this would be used instead of a separate audio video and power sockets.

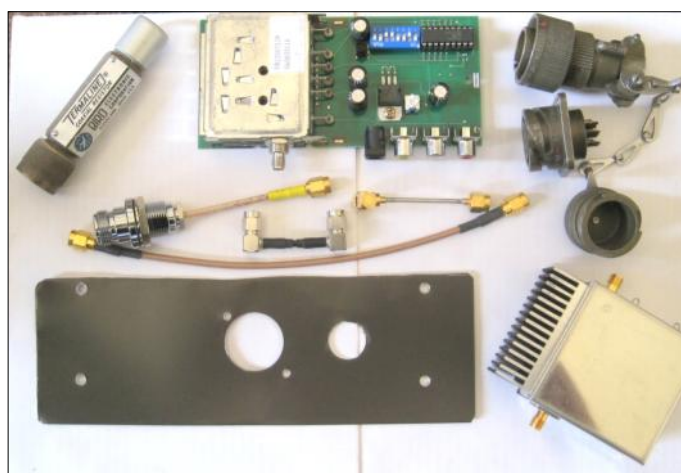


Photo 2

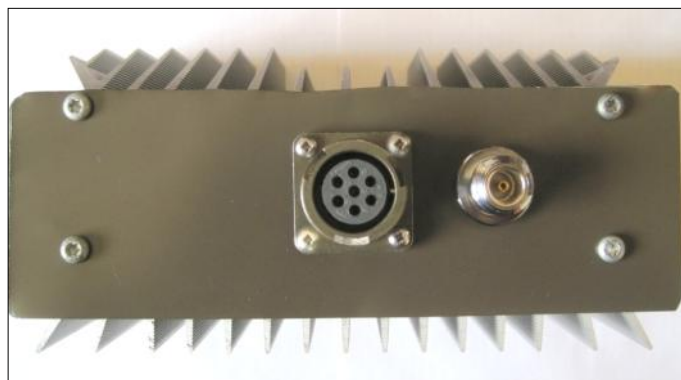


Photo 3: the finished item, DC power, audio and video is carried by the seven-core cable.

A couple of mock panels made from cereal boxes were used first to get the parts in the right place, providing some more room for the cable and allowing me to solder. The power is taken from the car battery via some fuses and a switch is installed in a part of the centre consul of the car with the lead coming directly from the battery to the switch and back to the transmitter. All working well! 73 Pat



Photo 4: Remote controlled camera able to pan right and left



Contest News

Joe Ryan EI7GY

contestmanager@irts.ie

IRTS Contest Results

Results of four IRTS contests have been published in recent months. The first of these was the **40 Metres Counties Contest**, a 3-hour contest held in mid-May. With 28 counties active on the day (all except Laois, Offaly, Leitrim and Wicklow), we received 31 logs, including logs from 6 clubs. Congratulations to the section winners (see table); I should mention that Merv MI0TMW had more QSOs than Pat EI9HX and worked the same number of counties, however a higher proportion of EI/GI QSOs by EI9HX gave Pat the edge in computing the total score.

CW Field Day is a 24 hour contest, co-ordinated with similar contests in other IARU Region 1 countries. Just two EI stations took part, Jeremy EI5GM and myself, a disappointing turnout; both stations operated for just a few hours and were single-operator entries.

The summer **80 Metres Counties Contest** has been a quiet event in recent years, and this year's event – on 21st June – was no exception. Just 11 station logs were submitted, which show 32 EI & GI stations active, in 17 counties. Yes, we were in competition with the great weather and GAA action on the day, but the real issue is the minimal daylight propagation on 80m in mid-Summer. It's time to drop this contest from the calendar.

VHF/UHF Field Day (4/5 July) Network Southern Area Radio Experimenters Club (EI9E) have been the "anchor group" in EI for this contest over many years. They were the only Open Section entrant, and operated on all 5 bands, with a team of 12 operators. (EI9E also enters the equivalent RSGB contest and their score is frequently at the top of the table). This contest has a one-band restricted section, for which we received 9 station logs.

Shorter Contest Option

The big international 24-hour and 48-hour contests continue to be well supported by EI stations – indeed many individual testers and contest groups in EI and elsewhere are only interested in contests with a minimum duration of 24 hours. However those who participate in contests on a more casual basis seem to have a preference for shorter contest operating periods. Also, looking at trends in field day contest entries, there no longer seems to be the same interest in operating portable stations overnight as there was, say, 10 years ago.

Responding to the changing situation, we have introduced 6-hour sections for the CW and SSB Field Day contests: any 6 hours of the 24 hour contest period can be logged, which need not be for one continuous period, but once operation has commenced in the contest, off periods must be a minimum of 60 minutes. It will be interesting to see if this move succeeds in generating more contest entries, I certainly hope it does!

The one-hour contests run by UKEICC have been well supported by EIs – so far this year, 22 EI stations have submitted logs to UKEICC. The RSGB 90 minute evening contests are, likewise, well supported in EI. This has prompted IRTS to look at introducing short evening contests.

2016 Contest Calendar

Next year's calendar will be published in October; in the meantime, I can confirm that the Winter 80m Counties Contest will take place on Friday 1st January 2016. The Summer version of this contest is not worth continuing, however a second 40m counties contest will be introduced. We will also run two evening one-hour 80m counties contests, one for SSB and one for CW, most likely on a Tuesday evening in February and November, respectively.

And Finally ...

I referred previously to the big international contests. EI stations put in a huge effort for these events, particularly those run by ARRL and CQ magazine; the RSGB IOTA contest is also a firm favourite with EIs.

EI7M is one of the most active EI contest stations, always finishing with good scores. One of their recent successes was achieving 1st place in Europe in the Multi-Single category of the 2015 ARRL International DX Contest (CW) which was held in February. The team involved in this – Dave EI4BZ, Mark EI3KD, Ger EI5KF, Jim EI3DP and Olaf G0CKV – are pictured below.



Another recent winner was Pat O'Connor EI9HX who came first in the 80 metres SSB Single Operator Low Power Assisted section of the CQ World Wide DX Contest held in October 2014. Pat's score of 196,000 from almost 1,500 QSOs represented a new world record for this category.

In the same contest, three additional Irish records were set; the new record holders are:

- Mark Condon EI6JK : Single Op – High Power – All Bands
- Bernard Gondard EI4II : Single Op Assisted – QRP – All Bands
- Olivier Vandenbalck EI1A : Single Op – Low Power – All Bands

contd. overleaf

IRTS Contests : Section Winners

40m Counties (17 May)

SSB Only Fixed (EI/GI)	EI9HX, Pat O'Connor
SSB Only Fixed (OEI)	GW4EVX, Ron Price
SSB Only Portable (EI/GI)	EI7T/P, Tipperary Amateur Radio Group
SSB/CW Fixed (EI/GI)	EI4CF, Niall Foley
SSB/CW Portable (EI/GI)	EI1K/P, Kerry Amateur Radio Group

CW Field Day (6/7 June)

Open Section	EI7GY/P, Joe Ryan
Restricted Section	EI5GM/P, Jeremy Sheehan

80m Counties (21 June)

SSB Only Fixed (EI/GI)	EI9HX, Pat O'Connor
SSB Only Portable (EI/GI)	EI1E/P, Avondhu Radio Club
SSB/CW Fixed (EI/GI)	EI8IU, Brian Canning
SSB/CW Portable (EI/GI)	EI7GY/P, Joe Ryan
SWL	EI1627, Mandy Lacey

VHF/UHF Field Day (4/5 July)

Open Section	EI9E/P, Network Southern Area Radio Experimenters Club
Restricted/50 MHz	EI1E/P, Avondhu Radio Club
Restricted/70 MHz	EI5KF/P, Gerard Scannell
Restricted/144 MHz	EI4KH/P, Denis O'Flaherty
Restricted/432 MHz	EI9GRB/P, Hans Krauss
Restricted/1296 MHz	EI7DAR/P, Dundalk Amateur Radio Society

EI DXCC Single Band Status as at 30th August 2015 Compiled by Joe Ryan EI7GY

		160	80	40	30	20	17	15	12	10	6	2
10	EI2JD	160	80	40	30	20	17	15	12	10	6	
10	EI3IO	160	80	40	30	20	17	15	12	10	6	
10	EI7BA	160	80	40	30	20	17	15	12	10	6	
10	EI9FBB	160	80	40	30	20	17	15	12	10	6	
9	EI2GLB		80	40	30	20	17	15	12	10	6	
9	EI6IZ	160	80	40	30	20	17	15	12	10		
8	EI6FR		80	40	30	20	17	15	12	10		
8	EI7GY		80	40	30	20	17	15	12	10		
8	EI9FVB		80	40	30	20	17	15	12	10		
7	EI1DG		40	30	20	17	15	12	10			
7	EI4BZ		80	40	30	20	17	15	10			
6	EI7JZ		40				20	17	15	12	10	
6	EI8IU				30	20	17	15	12	10		
5	EI4CF		40				20	17	15	10		
5	EI4GJB						20	17	15	12	10	
5	EI6AL						20	17	15	12	10	
5	EI6JK		40				20		15	12	10	
5	EI8GS		80	40			20		15	10		
5	EI9E		80	40			20		15	10		
5	EI9JF		40	30			20	17	15			
4	EI3GV						20	17	15	10		
4	EI9GLB						20	17	15	10		
3	EI3CTB						20		15	10		
3	EI4GK						20		15	10		
3	EI4GNB						20		15	10		
3	EI4HH						20		15	10		
3	EI6HB						20		15	10		
3	EI7GL		40							10	6	
3	EI9HQ						20		15	10		
2	EI2II						20			10		
2	EI5IF						20		15			
2	EI7JN						20		15			
1	EI3EBB										6	
1	EI3HA						20					
1	EI4DQ											2
1	EI5EV									10		
1	EI5FQB						20					
1	EI5GSB						20					
1	EI6S		80									
1	EI7IG						20					
1	EI8IQ						20					
1	EI9CJ										10	

160 80 40 30 20 17 15 12 10 6 2

New Irish records were also set in the CW leg of this contest:

- Ger Scannell EI5KF : Single Operator – High Power – All Bands
- Padraic Baynes EI5IX : Single Op Assisted – Low Power – All Bands
- Papa Lima DX Group EI1Y : Multi-Operator Single-Transmitter
- Doug Turnbull EI2CN : Single Op Assisted – High Power – 15M
- Paul O'Kane EI5DI : Single Operator – High Power – 80M

Well done to all!

Joe EI7GY, IRTS Contest Manager

Links:

Contest calendar: irts.ie/contests
Contest results: irts.ie/results

IARU Region 1 VHF Contests

We have been asked by the IARU Region 1 VHF Contest Committee to highlight an issue that has arisen following the introduction of the new 6-hour category in their contests. Some of the "6-hour" contesters are operating for more than 6 hours, but submit logs showing QSOs only for the 6 hours. This causes problems for log-checking software, because the "missing" QSOs are rejected in the 24-hour class logs.

The contest committee has asked that "every participant planning to enter the 6-hour category should send his complete log even if he operated longer than 6 hours. Only first 6 active hours will be used for score evaluation, while the rest of the log (if at all) will be used for cross-check purposes".

IRTS Contest Logs

Contest results should be sent to contestmanager@irts.ie

Remaining paper logs should be sent to Joe EI7GY, QTHR

EI DXCC Listings - Compiled by Joe Ryan EI7GY as at 30th August 2015

Entries in Bold Type show changes since 26th May 2015

Mixed

365 EI8H
356 EI6S (+5)
 353 EI7CC
 348 EI6FR
 346 EI8EM
 345 EI7BA
 340 EI2GS (SK)
 329 EI9FBB
 326 EI3IO
324 EI5GM (+7)
 320 EI9O
312 EI8FH (+12)
 311 EI2GLB
 310 EI4II
 306 EI2HY
 306 EI4CF
 304 EI6IZ
303 EI2CR (+3)
 296 EI2JD
 291 EI9FVB
 287 EI9JF
285 EI8IU (+8)
269 EI7JZ (+6)
 269 EI8GS
 265 EI4BZ
 264 EI6AL
 262 EI2GX
 258 EI9GLB
 246 EI1DG
 243 EI6JK
 237 EI7GY
 235 EI4HH
 230 EI4GXB
 214 EI5IF
 210 EI6IL
 209 EI7JN
 203 EI9E
 193 EI3HA
 191 EI6HB
 188 EI4IR
 177 EI9HQ
 174 EI3CTB
 165 EI5EV
164 EI7IG (+6)
 158 EI4GNB
136 EI9CN (+10)
 135 EI9CF
 131 EI5FQB
 131 EI5GSB
 129 EI5GUB
 128 EI8HA
 127 EI9CJ
 116 EI6CPB
 115 EI5JQ
 104 EI9GWB
 103 EI3HDB
 101 EI6FM
 101 EI7JQ
 101 EI8JB
 100 EI3GAB
 100 EI4HQ
 100 EI8KF

CW

338 EI7BA
 333 EI7CC
 330 EI6FR
 314 EI9FBB
305 EI8FH (+13)
 300 EI6IZ
 293 EI4CF
 279 EI2JD
 267 EI2GLB

255 EI8IU (+12)
 253 EI9JF
 246 EI6AL
 244 EI4BZ
231 EI5GM (+12)
 230 EI7GY
211 EI1DG (+2)
 190 EI8JX
 171 EI9FVB
 168 EI4HH
155 EI7IG (+6)
153 EI7JZ (+15)
 127 EI9CF
126 EI4BK (New)
 113 EI2KK
 110 EI9E
 109 EI2IH
 109 EI4HM (SK)
 104 EI6HB
 100 EI3CTB
 100 EI3KE
 100 EI3KG

Phone

353 EI6S (+5)
 351 EI7CC
 346 EI8EM
 343 EI7BA
 338 EI2GS (SK)
 336 EI6FR
 331 EI8AR
 319 EI9FBB
 309 EI3GV
 300 EI4GK
 300 EI8AU (SK)
 284 EI9FVB
 280 EI2JD
 275 EI4CF
 269 EI8GS
 268 EI2GLB
 264 EI9HX
259 EI7JZ (+7)
 258 EI9GLB
250 EI8IU (+13)
 241 EI6JK
 225 EI9JF
222 EI8FH (+22)
 213 EI7GL
 212 EI4HH
 209 EI4BZ
 208 EI4GJB
 200 EI6IL
 196 EI9E
 191 EI3HA
 188 EI2CH
 186 EI7II
 185 EI6AL
 177 EI5IF
 177 EI9FE
 171 EI9HQ
 160 EI2II
 160 EI6HB
 143 EI3CTB
 137 EI4GNB
134 EI9CN (+11)
 131 EI5FQB
 131 EI5GSB
 116 EI6CPB
 114 EI4EX (SK)
 105 EI1CS
 103 EI3HDB
 103 EI6GGB
 102 EI1DG
 102 EI4DJB

101 EI3IP
 101 EI6FM
 100 EI3GAB

RTTY/Digital
 297 EI7BA
221 EI1DG (+2)
 215 EI6FR
195 EI8FH (+47)
 181 EI2GLB
172 EI8IU (+13)
 129 EI3CTB
 121 EI6HB
 108 EI5IF

160m

244 EI7BA
 212 EI3IO
 140 EI6IZ
 138 EI9FBB
 122 EI2JD

80m

310 EI6S (+6)
 293 EI7BA
 241 EI9FBB
 166 EI2JD
 158 EI6FR
 142 EI3IO
 136 EI6IZ
 119 EI4BZ
 108 EI7GY
 103 EI8GS
 101 EI2GLB
 101 EI9E
 100 EI9FVB

40m

316 EI7BA
 254 EI9FBB
 236 EI6FR
 209 EI4CF
 205 EI6IZ
 202 EI2JD
 185 EI3IO
 177 EI9JF
 172 EI2GLB
 154 EI6JK
 139 EI4BZ
130 EI7JZ (+2)
 129 EI8GS
 127 EI9E
 120 EI7GY
 118 EI9FVB
 117 EI7GL
 110 EI1DG

30m

327 EI7BA
 254 EI9FBB
 231 EI6FR
 223 EI3IO
 220 EI6IZ
 167 EI9JF
 156 EI7GY
 125 EI2GLB
 124 EI2JD
 120 EI4BZ
115 EI8IU (+3)
 102 EI9FVB
100 EI1DG (New)

20m

339 EI7BA
 333 EI6FR
 321 EI9FBB
 257 EI2JD
 256 EI4CF
 251 EI3IO
 246 EI9FVB
 229 EI6IZ
 220 EI2GLB
 217 EI9JF
 211 EI8GS
209 EI8IU (+16)
198 EI7JZ (+8)
 196 EI4BZ
 186 EI1DG
 171 EI7JN
 168 EI9E
 161 EI6JK
 161 EI7GY
 157 EI9GLB
 145 EI6HB
 144 EI4GJB
 135 EI4HH
 133 EI5IF
 130 EI3GV
 130 EI6AL
 126 EI3CTB
 126 EI3HA
 118 EI9HQ
 117 EI4GNB
 113 EI4GK
 112 EI8IQ
107 EI7IG (+2)
 105 EI2II
 103 EI5FQB
 102 EI5GSB

17m

334 EI7BA
 301 EI9FBB
 278 EI6FR
 218 EI6IZ
206 EI8IU (+16)
 195 EI9FVB
 191 EI2JD
 188 EI2GLB
 166 EI6AL
 163 EI7GY
 162 EI4CF
 146 EI9JF
140 EI1DG (+5)
137 EI7JZ (+13)
 129 EI3IO
 127 EI4GJB
 111 EI9GLB
 110 EI4BZ
 108 EI3GV

15m

331 EI7BA
 299 EI9FBB
 297 EI6FR
 251 EI4CF
 233 EI9FVB
 231 EI2JD
 217 EI2GLB
212 EI8IU (+16)
 208 EI6IZ
 204 EI3IO
 202 EI4BZ
 193 EI6JK
 181 EI8GS
 177 EI9E

176 EI1DG (+3)
167 EI7JZ (+7)
 162 EI6AL
 151 EI7GY
 148 EI4HH
 136 EI6HB
 129 EI9GLB
 122 EI3CTB
 120 EI4GJB
 119 EI4GNB
 113 EI3GV
 109 EI7JN
 107 EI5IF
 105 EI9JF
 104 EI4GK
 101 EI9HQ

12m

322 EI7BA
 280 EI9FBB
 185 EI9FVB
184 EI8IU (+17)
 172 EI6FR
 151 EI6AL
 147 EI2JD
 143 EI6IZ
 142 EI2GLB
 140 EI6JK
130 EI1DG (+4)
118 EI7JZ (+10)
 117 EI7GY
 106 EI3IO
 100 EI4GJB

10m

305 EI7BA
 282 EI9FBB
 257 EI3IO
 217 EI2GLB

217 EI6FR
 199 EI4CF
 197 EI2JD
 194 EI9FVB
 183 EI4BZ
174 EI8IU (+22)
 173 EI6JK
 171 EI8GS
166 EI1DG (+2)
 166 EI4HH
 160 EI9E
 159 EI6AL
 159 EI6IZ
148 EI7JZ (+6)
 144 EI7GL
 136 EI4GK
 131 EI7GY
 116 EI3CTB
 115 EI9GLB
 112 EI4GJB
 111 EI4GNB
 111 EI9CJ
 105 EI6HB
 104 EI3GV
 103 EI9HQ
 101 EI2II
 101 EI5EV

6m

160 EI3IO
 150 EI9FBB
 112 EI7BA
 111 EI7GL
 107 EI2JD
 105 EI2GLB
 101 EI3EBB

2m

145 EI4DQ (+24)

DXCC Honor Roll

Mixed

340 EI6FR/348
 340 EI7BA/345
 338 EI7CC/353
 338 EI8EM/346
337 EI6S/356 (+5)
 337 EI8H/365
 332 EI2GS/340 (SK)

Phone

338 EI7BA/343
 338 EI8EM/346
336 EI6S/353 (+5)
 336 EI7CC/351

CW

334 EI7BA/338

DXCC Challenge

2889 EI7BA	1142 EI1DG (+26)
2500 EI9FBB	1090 EI6JK
2006 EI6FR	1030 EI5GM (New)
1850 EI3IO	1018 EI9JF
1729 EI2JD	1009 EI7JZ (New)
1720 EI7CC	
1714 EI6IZ	
1528 EI2GLB	
1466 EI4CF	
1430 EI9FVB	
1239 EI8IU (+100)	
1160 EI7GY	
1156 EI4BZ	

Members Advertisements

For Sale: ACOM 1500, little use, spotless. Hygain VB-25FM 2m yagi. 5 element, 11dBi, 250W FM, assembled, never used. €65. MFJ-986 3 KW PEP Differential-T Tuner, excellent condition, with manual, €200. MLP62 LPA. TX/RX 50-1300MHz, Boom length 2m. Longest element 3m, Gain 10dBi, 500W, N connector. €150. Eddystone 1838/1 RX 1.6MHz to 30MHz in 5 bands. All solid state, digital readout. 19" rack mount, 17kg. complete with Operators/Service Manual. €400 ono. Marconi Marine Transocean TX, 1.6 – 26MHz, 400W SSB/WT, solid state with servo tune, valve PA, complete with 24V PSU, Bench 19" rack unit, operator and all service manuals. TX and PSU need repair. €400 ono. Colm EI0CT williamcolmnolan@gmail.com

For Sale: Radio Scanners, Bearcat 780 €15, Bearcat 800 €200, Grecom 600 €300, Carolina Windom antenna €100. ATU for FT847 €120. Jimmy Ryan EI8FC 086 303 2705

For Sale: Elecraft K2 transceiver with KPA100, 100W, KSB2, SSB K160RX, 160M, 2nd RX Antenna KNB2, noise blanker KDSP2, Advanced internal DSP filter and clock. KAT100-1, 100W Ext. ATU and Heil hand mic. Serial 4009. Manuals included, also power cable and RS-232 cable for PC control. €800. RigExpert USB transceiver interface. €120. Seamus EI9CF 086 357 4756

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